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ABSTRACT

This study examined the experiences of nine faculty members in the development of two online courses at a community college in southeast Nebraska. The faculty members used Lotus Notes (software that was adapted for instructional delivery known as computer-mediated communication) as the delivery tool. Data was collected through interviews, observations, and participant-observations. Additionally, all online communications were analyzed. Findings included: (1) a single faculty member should not develop a course on his/her own-diverse groups help to ensure that the entire scope of the course is attended to; (2) faculty members need time to experiment and have fun so that they can become comfortable with the software and hardware; (3) faculty participants should be given the opportunity to be students before becoming online instructors; (4) it is important to screen faculty members before starting the actual training process for online course development-prospective participants should be screened for technical aptitude; and (5) online learning needs assessment in several areas. The development process of moving from a traditional classroom to an online environment is a time-consuming and complex task. This report records these experiences. (Contains 125 references.) (EMH)

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A Case Study: Experiences in Developing Online Courses at a Community College

by

Neal L. Henning, Ph.D.

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Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

for the Degree of Doctor of Philosophy

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Major: Administration, Curriculum, and Instruction
(Educational Leadership and Higher Education)

Under the Supervision of Professor Miles Bryant

Lincoln, NE

August 2000

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A CASE STUDY: EXPERIENCES IN DEVELOPING ONLINE COURSES AT A COMMUNITY COLLEGE

Neal L. Henning, Ph.D.
University of Nebraska, 2000

Advisor: Miles Bryant

The purpose of this study was to examine the experiences of nine faculty members in the development of two online courses at a community college in southeast Nebraska. The faculty members used Lotus Notes (a piece of software that was adapted for instructional delivery known as computer-mediated communication) as the delivery tool for the courses.

Data was collected through interviews, observations, and participant-observations. Additionally, all online communications were analyzed. From data analysis, a description of the experiences of the faculty members was produced. The themes that evolved were the following:

1. The importance of group dynamics came through in the respect that the diversity of the group needs to be considered. This study also suggests that an outsider who is unfamiliar with topic area be involved. This research also indicates that a single faculty member should not develop a course on his or her own. Groups help to assure that the entire scope of the course is attended to.
2. Participants need to be given time to play. Faculty members need time to "experiment and have some fun" so that they can become comfortable with the software. This time also allows them the opportunity to work out any technical problems that might occur.

3. Faculty participants should be given the opportunity to be a student before becoming an online instructor. This case study suggests that a "mock" course be built for the faculty members. The "mock" course should either center around the software and how to manipulate it or on the theories of learning in an online environment.
4. The case study found that it is important to screen faculty members before starting the actual training process for online course development. Prospective participants should be screened for the technical aptitude. Based upon that aptitude additional training needs to be given in the areas where the faculty members have a deficit. An instructional design would greatly enhance the final product.
5. Online learning needs assessment in several areas. The entire program of online education needs to be assessed. The courses as delivered by Lotus Notes need to be assessed and an assessment of the courses needs to take place to ensure their viability.

The development process of moving from a traditional classroom to an online environment was a time-consuming and complex task. This study records those experiences.

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Chapter One: Introduction

Prologue

Driving 100 miles weekly or twice a week to attend class. Sitting in a classroom situation for 2 ½ hours after a day at the office. The attempts to be interactive in this type of situation. The class is usually midweek. The never-ending sleepy syndrome that seems to come on after the first hour of lecturing was ever present. Assuming the role of the passive learner and the continuous flow of information and handouts from the instructor. This was my experience in a quest to obtain a Doctor of Philosophy Degree in Higher Education at a local university.

During the coursework of this program, I was promoted from instructor to assistant campus director within the community college where I am employed. With the change in positions, changes in duties and responsibilities occurred for me. It soon became apparent that either the goal of the degree or the position would have to go. The position was extremely challenging and rewarding but the opportunities for further advancement would be limited without the doctoral degree.

One year into the doctoral program and I was beginning to wonder if a degree was in sight. With a spouse and three active children it was pretty evident that the degree would have to be put on hold until a time when the children were older.

The Educational Administration department at the local university had recently begun experimenting with offering graduate level courses on the internet. Having little experience with this type of learning I quickly jumped on board. I saw this as an opportunity.

No more driving. No more sitting for hours in a classroom situation. The thought of anytime, anyplace was of a definite appeal. I began with a course in the History and Philosophy of Higher Education. The software arrived along with a packet of instructions. Eager to find out how all this was going to work, I quickly opened the package and went to work. The installation process was a breeze. Within an hour, I was up and running.

On the computer screen, the classroom now appeared. No live instructors, no "real" classmates. Could it be possible that this was going to replace what happened in the traditional classroom? The possibilities began to unfold. Instead of traditional formats everything existed on the screen in the form of databases. Titles such as Course Members, Virtual Classroom, Student Classroom, Chat Room, Faculty Office, and Student Journal appeared.

By simply double-clicking on one of the databases the experience began. The initial unit was introductory, much as what would happen in a traditional classroom. Introductions, but done in a virtual environment. A format of sharing in written context in the discussion of careers, goals, and family occurred between students that had never met "face-to-face" and in all likelihood might not ever meet. It was reassuring to see that the classmates were all in situations similar to mine. Nearly everyone was balancing family, career, and furthering their education. The initial conversations were based upon these types of topics in a database called the "Chat Room." It was amazing to see how quickly the camaraderie built among the participants in the course.

The "chit chat" was over. It was time to move on. Within the structure of the course, timelines were assigned with suggested work limits on particular questions for discussion. It immediately struck me that everyone had to respond to every question or case. What a novel idea, how many times in a traditional setting has that occurred? I know from my past experiences as a classroom instructor that it is nearly impossible to get 100% participation. This type of learning puts the responsibility on the student to become an active learner. No more sitting in the back row waiting for the "eager" student to answer the general question posed to the class.

Having been a product of a traditional education and of a traditional teacher training institution the format and learning that occurred online was very satisfying. I believed that I had not only found the answer to solving the time and place issue but an environment that "finally" met my learning style.

In a traditional class, I was the "passive" learner, taking notes and listening to others share their views rarely participating in the discussions. I am a person who needs time to think and process information before giving my view. Many times after class discussion was over and I was driving home the thoughts and ideas began rolling. Thoughts of "I wish I would have said…" Or "I should have thought of…" were typical thoughts. Often times I wondered what the instructor and other students would think in a traditional class. The feelings of intimidation were a factor in the traditional class for me.

In the virtual environment I began to blossom. I had time to think and reflect before responding. The resources needed to give the necessary background were readily available. The physical and visible characteristics of the other students were no longer an issue for me. What a find, I am finally comfortable and have found myself 'learning' at a rate I thought would never occur.

All this and it happened in the comfort of my own home and office. With personal experiences as a successful online student, I began the process of bringing online learning to my community college.

Online Education

Online education makes possible a new teaching-learning culture by eliminating the barriers of time and distance. Through Internet-linked personal computers and Lotus

Notes groupware, learners have in-depth dialogue with all fellow students and course faculty. Learners choose the time; the place is wherever they happen to be with access to a computer. Online education provides easily accessible, effective and cost-efficient learning opportunities.

Online education is a networked approach to teaching and learning in which interactive learning teams of students and facilitators located anywhere in the world work together to achieve desired educational outcomes. The term "online education" was first used at the University of Nebraska in 1994 when a multi-disciplinary faculty team at the educational administration department designed a unique technology-based graduate program. The term "online" relates to learners and faculty being located in multiple sites, and the fact that the educational program itself is online to them at their separate sites.

A community college in southeast Nebraska is moving towards offering courses via Lotus Notes. This process required them to explore what may be some different ideas regarding the teaching and learning process. The community college partnered with the Department of Educational Administration (EDAD) at a local university to explore the opportunities. The goal of the experiences was to provide an opportunity to explore interesting ideas regarding learning and to enhance our capacity to apply these to our professional activities. The objectives of the project as stated by EDAD were as follows:

1. To improve the effective and efficient practice of online education among selected faculty at the community college;
2. To enable faculty from the community college to effectively design and deliver online education courses;
3. To promote among professional educators an understanding and unitization of the new learning culture and to develop some of the skills useful in its application.

Lotus Notes is part of a specific instructional delivery system known as computer-mediated communication that emerged in the early 1980s (Harasim, 1990) and is relatively new to education. Online education is "the use of networks of computers to facilitate interaction between spatially separated learners" (Jonassen et al, 1995, p. 16). This method centers around two important features. First, "it is essentially a medium of written discourse, which nevertheless shares some of the spontaneity and flexibility of spoken conservation," and second, "it can be used as a powerful tool for group communication and for cooperative learning" (Kaye, 1989, p.10).

Online education which is being used to supplement or replace other methods of distance education, can be accomplished through technologies such as electronic mail (e-mail) or groupware. An advantage of online education is that it is time and place independent, unlike other modes of distance education, such as fixed-time satellite broadcasts, which require the student's attendance at a certain time and place. This type of learning is often referred to as asynchronous learning. Asynchronous learning is two-way communication where there is a time delay between when a messages is sent and when it is received. Examples would include electronic-mail, voice-mail systems, listservs, and archived mail. Online education allows a student to choose the best time for individual learning activities, decide how much time he or she wants to spend on that activity, and how he or she wants to allocate that time, whether it be in large or small periods of time (Fredricks, 1997). Moreover, a student has more control in relation to the nature of interaction (Harasim, 1989). The student can respond to questions or comments after reflecting on them, or referring to another source. The ability to save comments from peers in the class and to reorganize the ideas contributes to the "active cognitive interaction with the content" (Harasim, 1989, p. 60).

There are various theories and frameworks from areas such as distance education, communication, and adult learning that have been applied to online education. However, the main question this study was designed for, was to look at the experiences of community college faculty as they developed two online courses. It is critical that the faculty members assigned to the online courses have the necessary skills, abilities, and mind sets that are required for offering online education to their students. This study looks at what is needed through the eyes of the community college faculty involved in the project.

Online education and its underlying implications for faculty needed to be researched so that educators, administrators, instructional designers, researchers, and learners can understand the process of online education and the options it offers. In addition, there is a need for research on online instruction that looks at the faculty development needed to assist faculty in the development of courses.

Context of the Study

As the result of a three-year venture fund request that was written by the researcher, a community college in southeast Nebraska with the assistance of a local university department was able to pursue the idea of online education in a community college environment. The purpose of the venture fund at Southeast Community College was to provide money to encourage community college employees to investigate, or implement on a one-time basis, ideas that may lead to growth and revenue-generating educational activities. Venture money is not to be used for pure program improvement or to fund projects beyond a one-time start-up or trial basis. A total of $28,593.00 was awarded to this project in the first year, $22,002 in the second year and it is expected that $42,000 will be provided in the third year. The dollars were used to provide stipends to the faculty members or for adjunct faculty members to take over one of their regular classroom assignments while involved in the project. The funds also provided money for all the participants to travel to the annual League of Innovation conference. The League of Innovation conference is the premier conference for community colleges which showcases recent innovations that have been implemented. The total average attendance at these conferences is 5,000 community college personnel from across the United States. By attending this conference, the faculty members were given the opportunity to attend many sessions to learn what others are doing and also the opportunity to network with colleagues from other institutions. Initially, eight faculty members from the various campuses of the community college were selected to participate in this venture. The participants were selected based upon their interest in a project of this type. They volunteered to be a part of this research project. The participants volunteering indicates a high level of motivation and desire to implement change.

Members from the Department of Educational Administration at the university (EDAD) were hired as facilitators for this process. The fee for their services ($9,315 first year and $9,250 for the second year) was covered by the venture fund. EDAD was used because of their experiences in the delivery of online instruction through Lotus Notes. The Educational Administration Department began delivering a doctoral program via Lotus Notes groupware in the Spring of 1995. They were chosen as the facilitators of the seminars because of their experiences in the development of the doctoral degree program.

The training of the community college faculty and development of selected courses occurred during a series of coordinated seminars. Face-to-face workshops were held between the community college faculty and the university instructional team. During those meetings the following topics were addressed: introduction to Lotus Notes, learning to be a Lotus Notes student, developing a Lotus Notes course, development of customized user instructional packages, and development of the course and user package. Between each of the workshops the community college faculty worked on assigned tasks and the development of two courses to be delivered online.

Purpose of the Study

The primary purpose for conducting this instrumental case study was to explore a bounded system over time through detailed, in-depth data collection of the experiences of faculty members in the development of two online courses at a community college in southeast Nebraska. This study is guided by the major research question: What are the experiences of community college faculty as they develop courses for an online learning environment?

To accomplish the purpose of the study, the following subquestion was addressed:

1. How do community college faculty members describe their experiences of transforming to an on-line environment?

Delimitations

Delimitations of the study include:

1. The study was confined to nine faculty members of a community college in southeast Nebraska who agreed to investigate the possibility of developing on-line courses.
2. The participants' responses are a reflection of, and confined to, their previous educational experiences, personalities, and learning preferences.

3. The participant's responses were confined to reflections of their personal and professional experiences throughout the process.

Limitations

Limitations of the study include:

1. Although the researcher practiced theoretical sensitivity in data collection and analysis, the researcher's biases and attitude were stated.
2. Due to the nature of qualitative research, the data may be subject to different interpretation by different readers.
3. The researcher is in a supervisory position of the faculty members involved in the development of the courses.
4. The researcher is a doctoral candidate in the educational administration department who provided the training and seminars.

Definitions and Terms

Computer-mediated communication, in the context of education, has been referred to by various terms. Jonassen et al. (1995) defined CMC as "the use of networks of computers to facilitate interaction between spatially separated learners." Levinson (1990) wrote that due to the importance of social factors, a better name for CMC would be computer conferencing, because the term conferencing emphasizes the inherent groupness of this educational medium. Another term used to describe this medium is online education, a more narrow term used by Harasim (1990), indicating that the medium is being used strictly for educational purposes. Other terms often found in the literature were electronic classroom, virtual classroom, and electronic education (Harasim, 1987).

Throughout the literature, these terms appeared to be used interchangeably, yet, in her discussion of the background of online education, Harasim (1990) shed some light on the ancestry of these terms. Online education is derived from computer conferencing, "a communication system for dispersed human groups" (Harasim, 1990, p. 41), which was invented and implemented in 1970 by Murray Turoff. Computer conferencing was designed to use the computer "to structure human communication of information exchange and effective problem solving" (Harasim, 1990, p. 41). The technology for this structure dates back to the late 1600s, when Party-Linc and Discussion systems were introduced by the Office of Emergency Preparedness (Zorkoczy, 1989). These systems led to the development of the EMISARI system that formed the first computer-mediated communication software structured for free-form discussion. The next generation of technologies introduced electronic mail facilities and were targeted toward larger user groups. The third generation transferred many of the functions to "intelligent" workstations. The advancements in computer conferencing technologies have reflected the progress that has been made in computer and telecommunications technologies that have occurred over the past twenty years. Continuous improvement in networks and software design play a major role in the ongoing development of computer-mediated communication as an educational medium.

Chapter Two: Review of Literature

In general, quantitative studies have very specific uses for the literature. The researcher uses literature to identify previous studies, or to discover gaps in understanding. Quantitative researchers are concerned with the relationships among variables and testing those relationships. Before they can begin their study, they must first know what variables are important, then know how to interpret the findings by predetermined modes of testing (Strauss & Corbin, 1990).

In qualitative research the literature should be used in a manner consistent with the methodological assumptions. Namely, it should be used inductively so that the literature does not direct the questions asked by the researcher (Creswell, 1994). In case studies, literature will be less used to set the stage for the study. In this particular study, the literature was used as a backdrop for the problem. A review of the literature in the areas of staff development, computer-mediated communication, and distance education was conducted.

The researcher continued to search the literature during the time of the case study and writing of the case. The literature was used as an aide to guide and gauge the information that was being produced by this study.

Internet, the Web and Browsers

The World Wide Web (WWW or the web) is an Internet-wide, distributed hypermedia information retrieval system, which provides access to a large universe of documents (Lennon, 1997) from information servers across the world. The web uses universally accepted protocols over non-proprietary networks (Gilbert & Moore, 1998). Tim Berners-Lee developed these protocols and presented them in a document entitled

"Information Management: A proposal." This proposal, after several revisions, resulted in the creation of the first text-based browser. A number of browsers pre-dated the popular Mosaic, released in February of 1993 by Mark Andreesen, who at the time was associated with NCSA (National Center for Super Computing Applications).

Although the Internet has been in use by universities since its inception, the deployment of graphical browsers, starting with Mosaic in 1993, followed by Netscape™, Microsoft's Internet Explorer™ an Opera™, has contributed greatly to increasing the user-base. The acceptance of these browsers by universities and the common public has resulted in the usage of the web becoming a commonplace occurrence. Based on survey data, Dholakia (1997) concluded that we should no longer view cyberspace as a specialized resource of the few. Instead, he suggested that it is time to "start treating it on par with other widely available media and infrastructure resources such as newspapers, telephones, television, highways, railways, and airlines" (p. 199).

Browsers allow users to navigate through and access information resources residing on the Internet through an easy to use hypertext interface on their personal desktop. Browsers make it possible to view text, images, and multimedia material in a single window. They enable the user to migrate from one information resource to another with the click of a mouse. The actual information that one navigates through may originate from a database located next door or across the world.

Synchronous and Asychronous Learning Environments

The capability to virtually connect anywhere at anytime eliminates distance and time as barriers to accessing information, thus creating enormous potential for students and teachers to rethink the resources available to them for their information needs and their learning preferences. Additionally, eliminating physical space and time considerations creates learning alternatives that were not here-to-fore possible. These alternatives make it possible for students to take a course anytime from anywhere according to their convenience and schedule (Bender, 1996) and thus eliminate the synchronicity as an issue (Bordeau & Bates, 1997). Individuals can communicate either synchronously or asynchronously, exchange ideas, cultivate discussion groups about specialized areas, and research a topic that interests them. This ability to communicate between individuals across the campus or across the world is a capability that has stimulated the interest of many and strengthened notions of an information superhighway and a global village (Lennon, 1997).

Asynchronous and synchronous communications capabilities are a versatile form of technological affordance that allow students and teachers in physically separated spaces to engage in the process of teaching and learning. They permit members of a group to have continuous conversations about a subject while disregarding time as a factor. The computer can be used to mediate and record conversations and represent the archives to members of the group for further reflection, deliberation and response (Hiltz, 1995). Synchronous communications in the context of the Internet, can be text-based conversations among participants located at their respective computer screens and logged into a common area responding in real-time to the issues at hand.

Web-based Learning

There are varying interpretations of web-based learning. At one end of the spectrum are 'external degree programs' that use the web as their sole delivery mechanism. These programs are described as "limited campus residence or the absence of a residence requirement; instruction that is free of time and place requirements and makes extensive use of various communication technologies; …faculty who serve as learning facilitators, coaches and mentors rather than as lecturers" (Spille, Stewart & Sullivan, 1997, p. 5). At the other end of the spectrum are faculty who use the web to supplement their teaching and/or enhance their learning practices for on-campus stuents enrolled in traditional courses. Mayadas (1997) discusses the wide-range of examples available as web courses. They range from simple web-based reading material to highly sophisticated learning networks.

Web based learning is sometimes referred to as asynchronous interactivity (Mayadas, 1997) or Asynchronous Learning Networks (ALN) and is defined as learning that includes network-based access both to materials and to people (Campbell, 1998; SCALE, 1998). Web-based learning has also been described as 'open learning'. Open learning systems provide students with the ability to connect to educational resources at their convenience and allow them the flexibility to explore these resources in an order that suits their needs (Quintana, 1998). Although open learning as an educational concept originated as the open education movement of the 70's (Marland, 1997), the web provides an infrastructure to implement the underlying concepts of learner focused education.

Impact on Higher Education Learning Environments

Opinions about the nature and degree of impact that the web will have on higher education span a wide range. These opinions represent a cross-section of stakeholders including those in educational technology (Green & Gilbert, 1995; Saltrick, 1996), business and technology administrators (Denning, 1996; Ganzert & Watkins, 1997;

Martin & Taylor, 1997), faculty (Broderick & Caverly, 1996; Dringus, 1995a, 1995b; Owston, 1997), educational philosophers (Kawash, 1997; Luke, 1997); researchers (Lopata & McClure, 1996) and university presidents (Rudenstein, 1998). Support for the Internet as a technology that can invigorate teaching and learning also comes from all these fronts. As Ryder and Wilson (1996) indicate, support seems to be largely driven from the bottom up – from the academic community and from individuals and small groups of grass root enthusiasts who have implemented this technology. The acceptance among students has also enabled the momentum.

Some authors argued that profound change in the structure and role of the university will occur as a result of the transformative possibilities of information technologies (Noam, 1995; Tehranian, 1996). Others wrote about the resulting economic implications (Denning 1996). In their vision of a cybernetic city, Gooler and Stegman (1994) proposed re-envisioned forms of educational opportunities that capitalize on the capabilities of information technologies. Chellapa, Barua and Whinston (1997) proposed an Electronic Education Environment or E3, as a model to support virtual universities.

Current Implementations

In the international arena, the Open University in the United Kingdom, a well known leader in distance learning, planned to have an online component to all of its courses (Rowntree, 1995). Hutchinson (1995) reported that a European Union (EU) initiative that has resulted in the creation of ERASMUS ICP Online, a transnational university that serves ten countries. At a meeting of the Western Governor's Association in December of 1995, eleven western states endorsed the notion of a virtual university to serve their region and permit interstate sharing of teaching resources (Davies, 1997;

Johnstone & Krauth, 1996). The National Technological University, University of Phoenix and the Graduate School of America are a few examples of institutions serving as alternate providers of education (Davies, 1997).

Distance learning programs in most universities are employing the web as a delivery mechanism. Additionally, increasingly universities are providing web-based educational experiences for their on-campus students (Erazo & Derlin, 1995; Hanna, 1998; Oblinger, 1997; Mayadas, 1997). The State University of New York (SUNY) Learning Network has a growing list of 19 campuses that offer graduate and undergraduate courses in a variety of subjects (SUNY, 1997). The American Council on Higher Education indicated that a number of options are available to students who want to gain a degree through online distance learning (Spille, Stewart & Sullivan, 1997).

Statistical evidence provides information to predict a strong likelihood that this trend will continue in the future. Beaudoin (1998) cited the National Center for Educational Statistics (NCES) which indicated that 40% of post-secondary students are working adults over the age of 30 and are choosing to study part-time. These numbers are projected to increase to 60% in the year 2000. It is also likely that a majority of these students will choose distance learning options. E-mail is used in one-third of all college courses. In 1990, 100 institutions had some distance offerings and by 1995, 75 more were offering entirely online programs. By fall 1998, it is reported that at least 85% of all institutions with enrollments of 3,000 or more will be offering distance education courses. A number of groups are now beginning to develop standards and principles, to provide a framework and create a standard language to enable dialogue, and address the quality of electronically offered programs. (Johnstone & Krauth, 1996).

Online learning is not confined to distance students alone. Statistics from the University of Colorado at Denver indicated that for Spring of 1998, out of the 609 students who were in the CU Online program, more than 500 were simultaneously taking courses on-campus as well (Guernsey, 1998). Guernsey summarized statistics from other universities such as Oklahoma, Rogers University, SUNY, Arizona State, Seton and University of Manitoba, to provide evidence that on-campus students are enrolled in online courses, traditionally designated for distance learning students. Evidence that the web will be increasingly used as a teaching and learning medium is accumulating at a phenomenal rate leading to conclusions that distance learning is the fastest growing form of education (McIsaac & Gunawardena, 1996).

Teaching and Learning Online

Some authors endorsed the view that virtual environments have the ability to transform the process of teaching and learning. Faculty can create new and different kinds of learning environments (Butler, 1998; Dede, 1996; Musto, 1997; Owston, 1997; Van Dusen, 1998) that incorporate vast information resources for use in education (Rogers, Geoghegan, Marcus & Johnson, 1996). At the very minimum, information exchange can be greatly efficiated among students and instructors using the web (Petrie & George, 1996). However, the more powerful learning environments are those where faculty can create environments that were not here-to-fore possible (Rowntree, 1995) and that are built for and around virtualized interactions (Couples, 1996). Dede (1996) termed these "knowledge webs" and stated that they "enable distributed access to experts archival resources, authentic environments and shared investigations" (p. 25). There are indications that the web can promote new kinds of learning by enabling students and teachers to engage in many-to-many (Rowntree, 1995) conversations, synchronously and asynchronously, about the subject under study.

Students can "weigh evidence, judge the authenticity of data, compare different viewpoints on an issue, analyze and synthesize different sources of information, and construct their own understanding of the topic at hand" (Owston, 1997, p. 31). Couples (1996) termed the scenario as one that promotes socratic dia/poly/togues. Lippert (1997) discussed the possibility that the Internet holds as the agora (a term that means assembly of people) where people come together, but emphasized the need for rooted and meaningful conversations on the Internet. Brown and Duguid (1995) indicated that these conversational paradigms are representative of a complex process of communication that includes explicit and implicit exchanges, central interlocutors as well as peripheral eavesdroppers.

Other authors argued that information technologies can support deep and transformative changes in curriculum (Rogers, Geoghegan, Marcus & Johnson, 1996) by providing faculty with an opportunity to rethink the nature of teaching, learning, and education (Oblinger, 1997; Owston, 1997). "Individualization of teaching, a much less publicized transformation, has already begun. The term simply recognizes a significant increase in the motivation and ability of faculty members to select and use unique combinations of teaching materials" (Green & Gilbert, 1997, p. 51). Cotlar and Shimabukuro (1993) emphasized the need for reengineering. They indicated that "simply mechanizing traditional methods via automation is unlikely to yield as much benefit as a zero-based redesign of the process" (p. 3). Some authors indicated that the web presents the unique opportunity to create rich learning environments (Dringus, 1995b) and settings within which 'cognition, communication, and collaboration' enable teachers and learners to transform information into knowledge and insight (Oblinger, 1997).

Hutchinson (1995) outlined three particularly significant parameters that the ERASMUS project intended to measure, as constructs made possible by web-based learning. Negotiated learning measured the degree to which the learner is able to personalize his/her learning. Participatory learning or the degree to which the learner is actively engaged in the learning process. Experiential learning or the degree to which learning is based on real-world experience.

Some authors were concerned with the predominance of eutopic, technocentric viewpoints that subscribe to technological determinism (Bromley, 1997; Duston, 1997) and raised issues relating to the quality of learning (Ashworth, 1998) and the loss of face-to-face interactions (Dye, 1997) in virtual environments. Oblinger cautioned that students might choose learning institutions for the best multimedia experience that they can buy. This possibility, in turn, has implications for policy decisions. McClure (1997) noted that students as consumers may dictate a change in current modes of delivery. Selingo (1998) reported that small private colleges are concerned about losing their continuing education programs to brand name online programs.

The Internet in and of itself, however, does not inherently guarantee learning. "But in a specific context involving learning activities, such as research, collaboration, self expression, and reflection, the Internet offers multiple affordances, so numerous that it may be a mistake for us to treat it as a medium. It is really an infrastructure which brings together media, tools, people, places and information, expanding the range of human capabilities" (Ryder & Wilson, 1996, p. 6). Clark (1994) argued that the medium permits and facilitates processes but it is the application of these capabilities, within a course, that is of more importance than the medium itself. The medium in and of itself makes no inherent contribution to improved learning.

Institutional Perspectives

Within educational institutions, there are varied perspectives on how to use these technologies. Gilbert (1996) indicated that faculty are most often interested in using information technologies to improve teaching and learning, administrators are interested in increasing productivity and providing wider access to academic programs, and technology enthusiasts are interested in creating lifelong learning communities. Kerka (1996) discussed the advantages of delivering instruction over the Internet. He mentions the following factors: time and place compatibility; potential to reach a global audience; eliminating concerns about compatibility of computer equipment and operating systems; quick development time; ease of updating content and lowered development and operating costs.

Statistical reports indicate that computing infrastructures on campus are stabilizing and increasing, thus creating opportunities for students and teachers to access and experiment with information technologies. However, there are no reports that indicate how these information infrastructures will be used in revitalizing, one of the very basic functions of the university, teaching and learning. Barksdale (1996) referred to findings by the U.S. Office of Technology Assessment (OTA) that, although 76% of education professors indicated that they perceived information technology to be an important part of teaching, 66% expressed anxiety about working with technology. The 1997 results of the popular annual Campus Computing Survey indicate that technology resources at higher education campuses are becoming part of the instructional resources for students. However, one of the top challenges reported by the chief academic computing officers, is the integration of technology into instruction. Reportedly, in 1997, 25% of courses draw on resources over the Internet compared to 15.3% in 1996 (CCS, 1997).

Lopata and McClure (1996) reported on the National Association of Colleges and Universities Business Officers (NACUBO) annual benchmarking data, collected from 48 research institutions in 1993. In the area of teaching and learning, there is an indication that there is a greater variety of expected benefits from the campus network, such as richer learning materials in the form of multimedia and simulations, which are mentioned most often. Two additional benefits linked directly to the network are increased communication between students and faculty and the development of distance learning.

The Sloan Center is participating in a three-year project to restructure fifteen undergraduate courses for Asynchronous Learning Networks (ALN) and will be disseminating the results of the project upon completion (Mayadas, 1997; SCALE, 1998). Many higher education leaders agreed that institutions that invest in technology to assist in distance education, at least in conjunction with some campus time, will be positioned for competitive success in the next century (UCLA, 1996). Recommendations by the task force on information technologies at the University of Maine supported the notion that information technology will be integrated into both on-campus and off-campus teaching activities. One of the action steps stated that high priority must be given to courses delivered in part or completely online (UMSTF, 1997).

An Infrastructure for New Paradigms in Teaching and Learning

Collis (1996) proposed five evolutionary paradigms in educational systems. The first paradigm she described as 'one-to-one modeling;' the second as 'going away, to an expert,' the third as 'expert at a distance via print,' the fourth as 'the assembly line,' and the fifth as 'interconnectiveness.' The last paradigm enables students to connect to human expert resources far beyond one's local possibilities. This paradigm includes features of the others but brings together a confluence of all these qualities into a whole that results in new possibilities. Students can connect with the experts when needed, initiate one-to-one interactions or one-to-many interactions, and access limitless educational resources in both print and electronic formats.

Harasim, Hiltz, Teles, and Turoff (1995) reported on the results of Harasim and Yung's 1993 study that surveyed 240 teachers and learners that used the Internet for education. Of the 176 responses to the question regarding differences between learning in a computer mediated communication (CMC) and a traditional classroom, 90% reported that there were differences, and the responses are reported as follows:

- The role of the teacher changes to that of facilitator and mentor.
- Students become active participants; discussions become more detailed and deeper
- Access to resources is expanded significantly
- Learners become more independent
- Access to teachers becomes equal and direct
- Interactions among teachers are encouraged significantly
- Education becomes learner centered; learning becomes self-paced
- Learning opportunities for all students are more equal; learner-learner group interactions are significantly increased
- Personal communications among participants is increased
- Teaching and learning is collaborative
- There is more time to reflect on ideas; students can explore on the networks; exchange of ideas and thoughts is expanded; the classroom becomes global
- The teacher-learner hierarchy is broken down. Teachers become learners, and learners become teachers (p. 15).

The same authors contended that research questions should investigate how that medium can be harnessed to support the goals of the teaching and learning, and not focus on the media itself. They suggested that a student-centered approach is best suited to the online world. "Computer mediated communication (CMC) is meant for sharing and building of ideas, information and skills among the participants to strengthen knowledge building, integration, and application of conceptual information" (p. 24).

Van Dusen (1997) outlined two implications that a paradigm shift from a professor-centered to a student-centered system of learning may entail for higher education faculty. The first involved creating an ideal learning environment and employing technology to deal with any variances from that ideal. The second was a shift from traditional to new roles and classroom responsibilities. Abelson (1997) reported that one of the core recommendations, of the Kellogg Commission, is that universities should make the creation of enhanced learning communities, that facilitate learning by students, their top priority. The commission consisted of 25 current or former presidents of state or land grant universities.

Owston (1997) stated that there are three advantages to using the web. The web appeals to students' learning mode, provides for flexible learning opportunities, and enables new kinds of learning. Lennon (1997) proposed a list of possibilities with formal learning, using computer networks:

- Students and teachers can interact electronically – from wherever they are located.
- Students can electronically download the teacher's notes and then individually annotate them from the teacher's explanations.
- Electronic question and answer sessions allow lecture forums in which the teacher is simply the facilitator.
- Computer supported collaborative work is provided for.
- Computer conferencing is supported.

Brown and Duguid (1995) suggested three issues that a university should consider in using technologies of the future:

1. Enable students to engage in open learning, exploration, and knowledge creation
2. Provide resources for both distal and local communities
3. Offer the means to earn exchangeable, equal credit for work-done in class, on-line, or through hands-on experience.

Green and Gilbert (1995) reported Kozma and Johnston's suggestions regarding the means by which information technologies can be used to transform teaching and learning. They are: from reception to engagement; from the classroom to the real world, from text to multiple representations; from coverage to mastery; from isolation to interconnection; and from products to processes. Milheim (1996) indicated that interactive learning supports the following: increased student interest, higher cognitive processing, development of cooperative learning skills; teacher involvement; curriculum integration and teacher-student collaboration. A powerful value that the computer-supported learning can add is the customization of learning based on individual needs and preferences of students (McClure, 1998). Campbell (1998) reported results of a preliminary analysis of three ALN studies at Vanderbilt University. He concludes that learners who learned on their own time were able to solve physics problems just as well or better than students who attended labs in person.

Hannafin, Hill and Land (1997) indicated that the amount and nature of information continues to grow far too rapidly for the old paradigms to function effectively. Decentralization of the locus of control of education from teacher to student, they claimed, is imminent and needed at the most fundamental level. They proposed using Open Ended Learning Environments (OELE), including but not limited to the web as systems, to support student centered learning environments. Learning should be directed toward student needs and should establish conditions that encourage and enrich critical thinking and problem solving.

Designing a course to be delivered in a traditional class versus designing a course to be delivered collaboratively and interactively online, requires a very different set of instructional strategies and philosophical orientations. Professors have to learn new pedagogical models and ways of interacting with students (McClure, 1997) but these issues are frequently and ironically left out of conversations about melding technology and teaching (Beaudoin, 1998). Theory and practical knowledge of how to use the Internet lags behind the technology itself (Ryder and Wilson, 1996). Models of instruction that are appropriate for the web are sorely lacking (Duchastel, 1997). Petrie and George (1996) proposed the need for research to ask questions about all aspects of web-based learning that include pedagogy, tools, technology, and issues relating to interface design. The real long-term academic benefit of information technology will be what it brings to pedagogy and curriculum—additional resources that enhance both the instructional tools used by the faculty and the learning experiences of students (Green and Gilbert, 1995).

Answering a self-posed question, "Is this the beginning of a new paradigm?" Boettcher and Conrad (1997) respond that the web "promotes learning experiences based upon the following types of interactions: faculty with students; students with other students; and students with resources such as books, journals, experts, and other dynamic electronic sources" (p. 1).

Teacher-to-Student Interactions

A number of authors perceived that the instructor's role in an online setting requires a different set of skills than those employed in a traditional classroom. Qualities emphasized were the need to be responsive and provide timely feedback (Hiltz, 1995; Nevin, 1998), serve as mentor, guide or facilitator (EVAT, 1998; Beaudoin, 1998; Chickering & Ehrmann, 1997; Helms & Larsen, 1996; Noam, 1995) and perform as creator of interactive environments for learning (Duderstadt, 1998; Harasim, Hiltz, Teles, & Turoff, 1995; Hiltz, 1995). A change in role from the faculty as the dominant source of communications to the role of students as voluble (Ehrmann, 1995b; Gurak, 1995; Petrie & George, 1996) and equal participants was discussed (Picciano, 1998; Sykes & Uber, 1995).

Collins and Berge (1996) summarized research to arrive at the conclusion that the instructor's role can be described in four categories: pedagogical, social, managerial, and technical.

The pedogogical role is one in which the instructor contributes content knowledge and special expertise in directing attention to specific concepts, skills, and principles. Certainly, some of the most important roles of online discussion instructor/moderator/tutor revolves around their duties as an educational facilitator. The instructor contributes their special knowledge and insights and uses questions and probes for student responses that focus discussions on critical concepts, principles, and skills. By modeling appropriate online behaviors, the instructor can prepare students, alone or in groups, to experience moderating the conference for themselves (Collins and Berge, 1996).

The social role entails promoting human relationships to maintain cohesiveness of a group as a learning community. Creating a friendly, social environment in which learning is promoted is also essential for successful online teaching. This suggests promoting human relationships, affirming and recognizing students' input; providing opportunities for students to develop a sense of group cohesiveness, maintaining the group as a unit, and in other ways helping members to work together in a mutual cause, are all critical to success of any conferencing activities (Collins and Berge, 1996).

The managerial role is described as the organizational, procedural and administrative role where the instructor needs to set the agenda and manages course communications. This role involves setting the agenda and pacing for the conference: the objectives of the discussion, the timetable, procedural rules and decision-making norms. Meta-comments can be used to remedy problems in context, norms or agenda, clarity, irrelevance and help participants deal with information overload (Collins and Berge, 1996).

The technical role is the degree of proficiency and expertise with the technology that includes assessing and relieving student problems in this area. The instructor must first themselves become comfortable and proficient with the technology and then must ensure that participants are comfortable with the system and the software that the conference is using. The ultimate technical goal for the instructor is to make the technology transparent. When this is done, the learner may concentrate on the academic task at hand (Collins and Berge, 1996).

Rowntree (1995) also describes social tasks in his reflections about teaching a three-month online course at the Open University's Institute of Educational Technology.

He described the social role as taking responsibility for creating and maintaining a culture of even-handed discourse. His description of the conceptual tasks is similar in nature to the descriptions of pedogogical tasks by Berge and Collins and the organizational tasks he described are similar to the descriptions of the technical role provided by Berge and Collins. Lastly, his description of conceptual tasks involved the role of the instructor as facilitator, in bringing students to understand critical concepts about the subject matter.

Noam (1995) indicated that "education is based on mentoring, internalization, identification, role-modeling, guidance, socialization, interaction and group activity" (p. 9). It is ultimately the role of the mentor, facilitator and guide through the transformative process of learning that should give meaning to what teachers do (Beaudoin, 1998). The role of the facilitator has also been discussed as one who guides students productively through thickets of information presented on the web (EVAT, 1998).

The seven principles of good learning submitted by Chickering and Ehrmann (1997), that includes a distillation of research from decades of undergraduate research indicated that student-teacher contact is one of the principles of good practice. They stated that communication technologies increase access to faculty members, help them share useful resources, and provide for joint problem solving and shared learning. They contend that the biggest success story in this realm has been that of time-delayed communication.

Studies of student responses defined the qualities of increased communications between teacher and students in online settings. Student responses were more elaborate (Nevin, 1998) and intelligent (Gurak, 1995). Nevin's study was based upon the development of a graduate level class and the pilot of that course. Her study focused on the depth and breadth of 50 student's responses who participated in the courses. Ehrmann (1995c) indicated that faculty can ask more probing questions to elicit deliberated answers from students, who can in turn respond without time and space constraints. Ehrmann's study looked at how the technology is used. Based upon research and surveys, he made recommendations as how to implement the technology the "right way." There is a perceived increase in contact (Guernsey, 1998) and access (Petrie and George, 1996) between teacher and student and its frequency and usefulness (Ehrmann, 1995b). Picciano (1998) reported in a survey of 17 that students in an online course requested no individual conferences and used e-mail extensively for one-to-one inquiries and discussions with the instructor.

Guernsey (1998) reported results from student interviews (609) who have enrolled in the University of Colorado at Denver online courses indicate that students feel that they receive more attention from faculty in online courses and that they could spend more time thinking about, and responding to questions their instructors pose.

Petrie and George (1996) discussed two courses taught via the web and drew conclusions based on two sets of data: their own experiences and student surveys administered following the course. They indicated that students appeared to appreciate greater access to the instructor. They also reported that keeping up with the interactions was a fairly time consuming task and that the need to be in constant communication 24 hours a day is an issue that needs addressing.

Student-to-Student Interactions

Web-based learning has been discussed as a technological environment suited for collaborative learning (Boettcher & Conrad, 1997; Collis, 1996; Galusha, 1997; Hiltz, 1995; Jonassen & Reeves, 1996; McClure, 1997; Van Dusen, 1997) that could be used for reflective and well thought out responses (Salaberry, 1996) between and among students.

Collaborative learning is defined as any activity in which two or more people work together to create meaning, explore a topic, or improve skills (Harasim Hiltz, Teles, & Turoff, 1995). A practical definition offered by these authors was "any learning activity that is carried out using peer interaction, evaluation, and/or cooperation with at least some structuring and monitoring by the instructor" (p. 30).

Jonassen and Reeves (1996) contended that learning with technology could foster reflective thinking. Norman (1983) argued that computers support reflective thinking when users are able to compose knowledge by adding new representations, modifying old ones, and comparing the two (as cited in Jonassen & Reeves, 1996, p. 696). Brown and Duguid (1995) suggested that the web provides a means for circulating digital objects, a means of communication and additionally a means to turn the ongoing conversation into another object of conversation for further reflection and learning. Authors emphasized the need to build learning teams (Duchastel, 1997) and peer-to-peer collaborative opportunities (Mayadas, 1997) in web-based settings to stimulate dialogue and inter-student interactions (Bordeau & Bates, 1997).

Three of Chickering and Gamson's Seven Principles of Good Practice which are widely discussed in higher education literature, and are a result of synthesis of years of undergraduate research, provide support for collaborative learning:

1. Good practice encourages cooperation among students
2. Good practice encourages active learning
3. Good practice encourages diverse talents and ways of knowing

There is evidence that there is an increase in the quality as well as quantity of messages exchanged between students. Harasim, Hiltz, Teles, & Turoff (1995) reported the results of an analysis of selected contents of online courses to conclude that learners formulated positions and responded to their peers with active questioning, elaboration, and debated. The information from Harasim, etal is in a text entitled "Learning Networks." The information that is included in the text is based upon information from their online students. Nevin (1998) reported that student-to-student interactions were a successful feature of her Internet class.

Winklemans (1988) indicated that message map analysis of interaction patterns in selected online discussions demonstrate that students refer to messages of others, adding on and building to the ideas posed. Winklemans demonstrated a number of relationships among notes in an educational CMC conference. His work clearly mapped the effects of instructor contributions on subsequent conference notes.

Wegerif (1998) introduced the notion of a threshold experience in collaborative learning. He indicated that "the threshold is essentially a social one; it is the line between feeling a part of a community and feeling that one is outside of the community looking in" (p. 38). Two factors that Wegrif delineated, as contributors to the preventive threshold are nervousness when posting and uncertainty as to how the posting will be received by others. His analysis was based upon ethnographic data gathered from 21 students who completed and those who dropped the course. His study was based upon the following:

- Knowledge of the course and the students stemming from his own participation in the course as an associate tutor.

- Online discussion of collaborative learning and evaluation issues both as an integral part of the course and as a discussion initiated by him in the 'lobby' area around the time of the official end of the course.
- Students' e-mail messages to their tutors.
- Six student responses to an online questionnaire concentrating on the issue of collaborative learning with a small number of open-ended questions.
- Five responses to a similar postal questionnaire.
- Telephone interviews with the six participants who contributed the fewest number of messages to the conference and with four students who were more actively involved in collaborative learning.
- The results of the students' own online evaluation..
- Taped interviews with the tutors of the course.

Webb (1989) reported that peer interactions, in which students are exposed to multiple perspectives on a particular topic and challenged by a question that requires expansion of their own ideas, provide a valuable opportunity for knowledge building and the development of critical thinking skills.

Ehrmann (1995c) indicated that peers could provide more and better feedback to thoughts and projects than ever possible in a face-to-face classroom. Butler (1995) reported the results of an analysis of access logs of course material to conclude that students viewed each other's final project once they were placed online. Butler concludes that this feature of the course, assisted in sharing ideas among students as opposed to the instructor alone having access to final reports. The latter is often the case in a traditional course. The framework and associated examples are drawn from the author's experience using the WWW with five courses.

Harasim, (1997) indicated that the following learning benefits were identified by students using online environments:

- Increased interaction: quantity and intensity
- Better access to group knowledge and support
- More democratic environment
- Increased motivation

Differences in the way female and male students perceive and perform in these collaborative environments are reported by Ory (1998) who studied 2,151 students enrolled in online courses in the fall and spring. He reported that females more often than males used conferencing on the web to communicate with other students and the instructor. Males spent more time exploring the web for resources as opposed to females. He also reported that females, more than males, reported using computers is difficult and they also report greater gain in computer familiarity at the end of the course.

Ferris (1996) reported the results of a study intended to research women's online behaviors. She observed and analyzed postings to an electronic list for psychology professionals. Her study proposed an investigation of women online, through a review of the literature supported by observation of women's communication in online discussion groups. She concluded that men were more likely to choose a topic for discussion, monopolize the conversation, have longer responses, and a more adversarial style in the discussion. Women were more inclined to be consensus builders, focused on positive interactions and employ a supportive style in communications.

Theoretical Perspectives

Burge (1988) characterized distance education as a "transmittal model," as it relies on mass delivery of pedogogic materials (by mail, radio, telephone, or TV) through self-study or by the use of a tutor. The interactivity found in face-to-face education is not present in mass delivery. Even with use of the telephone or electronic mail, interactivity between instructor and student remains weak. Sewart proposed that the theories on oral-group-based education were not appropriate for distance education because it was not based on interpersonal communication but rather the "privatisation of institutionalised learning" (1981, p. 16). Michael Moore in Keegan (1991) emphasized learner autonomy and independence in his theory of distance education, while Otto Peters compared distance education to the industrial production process and therefore believed that it was "a new form of industrialized and technological education" (Keegan, 1991, p. 74).

As stated above, computer-mediated communication does share some attributes with distance education. A theoretical framework has been developed for distance education in which computer-mediated communication could be placed. The theoretical framework of distance education includes the following elements:

- Quasi-permanent physical separation of a teacher and a learner throughout the length of the teaching process;
- Quasi-permanent physical separation of a learner from a learning group throughout the length of the learning process;
- Participation in a bureaucratized form of education provision;
- Utilization of mechanical or electronic means of communication to carry the content of the course; and
- Provision of means for two-way communication so that the learner can benefit from and/or initiate dialogue. (Keegan, 1991, p. 105)

Computer-mediated Communication

Computer-mediated communication offers a unique medium for teaching and learning, with its own valuable features and distinct learning atmosphere that are different from traditional face-to-face classroom activities, as well as from other forms of distance education. Some view online education as a new domain of education that deserves to be developed as its own medium (Harasim, 1989). Online education shares certain attributes with face-to-face and other forms of distance education; however, as stated in the introduction, one should not narrow themselves to previous theoretical perspectives that may not adequately explain online education as a medium with its own unique attributes and educational opportunities.

Harasim (1990) posited that there are five key attributes that taken together differentiate online education from other modes of education. (1) many-to-many communication; (2) place independence; (3) time independence (that is, time-flexible, not atemporal); (4) text-based; and (5) computer-mediated interaction. Face-to-face education also has the capacity for group interaction, but participants are bound by time and place. Like online education, distance education is not always dependent on time and place, however, it is grounded in a "broadcast (one-to-many) or tutor (one-to-one) model" (Harasim, 1989, p. 50). Figure 1, shows some of the shared and unique attributes of the three educational domains as proposed by Harasim: online education, distance education, and face-to-face education. The combination of these shared and unique attributes creates a new environment for learning.

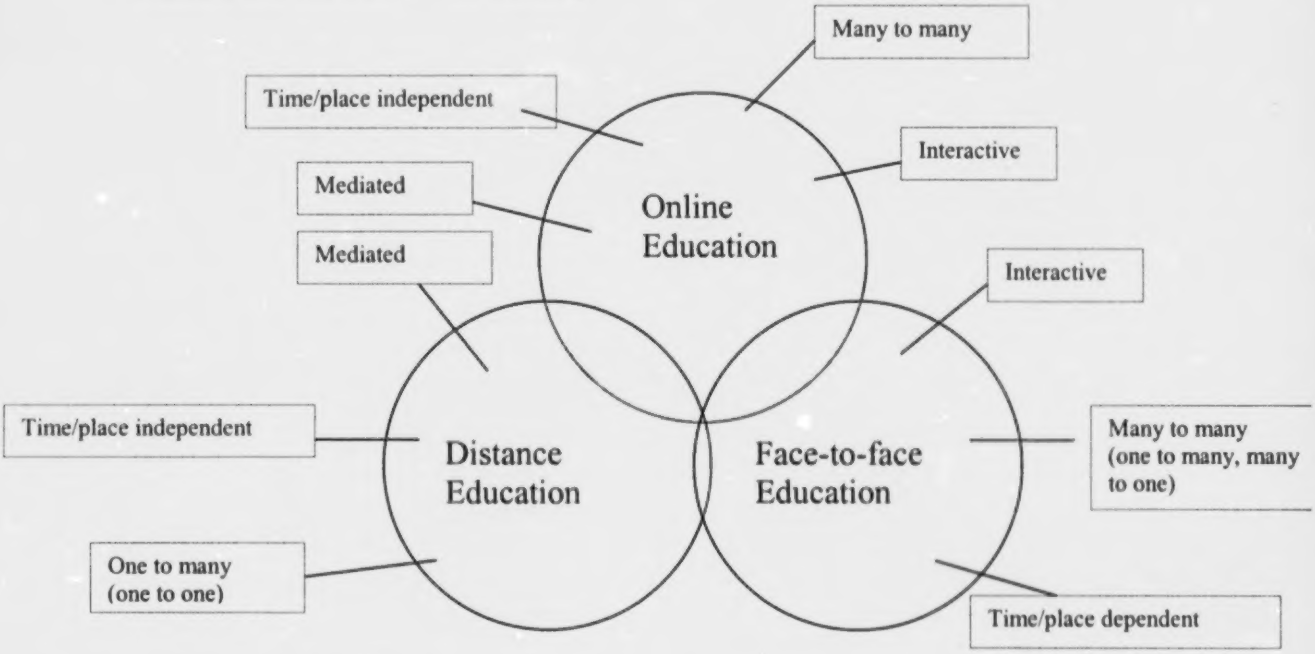

Many to many
Time/place independent
Interactive
Mediated
Online Education
Mediated
Interactive
Time/place independent
Distance Education
Face-to-face Education
Many to many (one to many, many to one)
One to many (one to one)
Time/place dependent

Figure 1. On-line Education as a New Domain. From Mindweave (p.51), by L. Harasim, 1989, New York: Pergamon Press. Copyright by L. Harasim.

Mason lists several elements that distinguish computer-mediated learning or computer conferencing from other mediums: "(1) students are taking an active role in what they learn; (2) students are learning through discussing; (3) the model of knowledge transmitted by the experience is that of knowing by formulating ideas; (4) the medium fosters cooperation rather than competition between students" (1988, p. 29). Although these attributes are present in other mediums of distance and face-to-face education, the fact that they are all present in the computer-mediated learning environment differentiates the CMC environment from other mediums of education.

Staff Development

The discussion about online teaching and staff development begins with a reference to teaching effectiveness because many of those who challenge the value of online instruction do so on the grounds that we do not know if it is as effective as traditional instruction. What is overlooked in this argument is the fact that although the teaching process does differ from traditional instruction, asynchronous teaching via the Internet has the advantage of offering many more objective ways of measuring the array of variables we typically align with the evaluation of teaching. It also offers additional opportunities for evaluation. Teaching online means that all of what you teach is public and open to review, if not evaluation. Student performance can be measured, and an instructor's responsiveness to student activities, questions, and comments is open to review, as is the quickness of responses. This is not to build a case for any particular strategy for evaluating the effectiveness of instructors who elect to teach online. Rather, it is to underscore the context of online instruction, which differs significantly from that of traditional instruction in terms of both delivery and openness to public scrutiny.

Critics cite the specter of reduced faculty control over the design, teaching, and evaluation of curricula at distance-education institutions (Crow, 1999). Those who believe that high-quality education requires face-to-face interaction will always question the performance of virtual institutions. Crow (1999) contends nothing inherent in an on-line institution demands radical redefinition of those traditional roles.

At many institutions that use the Internet as a vehicle for instruction, the design, delivery, and evaluation of each course remain in the hands of a single faculty person, often full time. Faculty members control the learning environment; they use e-mail to lecture and encourage discussion online, and to read, comment on, and grade papers. Faculty members might need help to master the technology and to design sites, but the faculty-led classroom model is translated into the asynchronous environment of Internet instruction. Jones International, a recently accredited on-line institution unbundles a faculty member's traditional role, placing various faculty responsibilities in the hands of several people. The institution hires content experts to work with its full-time instructional-design staff to create the degree requirements and the curriculum, and to evaluate their quality. The institution also employees mentors, skilled at facilitating learning on line, to teach and work directly with students. Full-time faculty members manage the quality of academic courses and programs by linking the content experts and the mentors, and supporting the professional development needs of the mentors (Crow, 1999).

At the time of Jones Internationals accreditation review, more than 25 appropriately credentialed people – including faculty members from some of the top research universities – had designed, delivered, and evaluated courses for the 65 enrolled students (Crow, 1999).

The mechanisms exist to assess the effectiveness of online instruction at a level of reliability not available in traditional instruction. If we are to develop truly effective, interactive courses, we will always need such experts in various disciplines to create content and to be partners with those with technical expertise. We will always need mentors who work directly with students to stimulate the questioning, creativity, and critical thinking that we all value in higher education. We will always need trained individuals to develop a credible, fair system to evaluate learning (Crow, 1999).

A backdrop for a discussion of teaching online is necessary if not essential. Just as faculty lack experience in developing instruction for delivery online, so they lack experience in teaching online from which to draw in offering suggestions on techniques. There is a body of literature on distance education teaching techniques, but online instruction was not an option when that knowledge base was developed. The research on distance education does, however, offer some direction and cannot be ignored while we wait for the online mode to be added to the knowledge base. For example, Sherry (1996), in a needs assessment study of the greater Denver area, noted that "the most important factor for successful distance learning is a caring concerned teacher who is confident, experienced, at ease with the equipment, uses media creatively, and maintains a high level of interacting with the students." In the context of online instruction, one might also add ".... And is tolerant of changing technology, policies, and expectations." Given the lack of experience in online instruction, one might also add willingness to move ahead on one's own initiative while learning from one's own experience (Sherry, 1996)

Instructors who see both the need of and the opportunity for teaching online and who are willing to invest in the experiment have a generally positive perspective. Wilson (1998) surveyed 71 instructors and found that they are willing to put forth the effort to develop the instruction, which is demanding, and to engage in teaching without knowing in advance what the demands will be. She also found that when development and online teaching are combined, which is typical, the work demands for the instructor far exceed those of traditional instruction. These instructors are committed to making it work, but they are at the same time working in an environment in which traditional instruction is valued. They are faced with having to restructure what they have routinely done as instructors to become effective in teaching online. It is difficult enough to be part of an experiment without also having to convince others that what you are doing not only has value, but also is important to the mission of the institution. There has been only limited organized resistance on most campuses to the development of online instruction, but it is reasonable to assume that opposition will occur. Issues related to quality, faculty roles, and rewards will likely be raised as institutions are called upon to offer courses and degrees online.

There is no question that course development has a significant impact on online teaching. If the course is poorly designed or the content is inappropriate or not current, it will become apparent to anyone who reviews the course. Dillon and Walsh (1992) in a literature review of 24 research studies found that the online instructor does not have the advantage of being able to make changes in lectures, resources, or even assignments on a routine basis, as might occur in traditional instruction. These decisions are all made before the course goes online. Revisions are possible, but are difficult and time-consuming. Instructors do not want to find themselves spending their teaching time apologizing or attempting to make real-time revisions in cumbersome ways.

Dillon and Walsh (1992) go on to say that the keys to online teaching are the course design, how the content is delivered, and how the instructor interacts with students as they progress through the course. However, course development is the most important of these components. Thus there is a clear distinction between teaching online and teaching a traditional course. Although planning is obviously involved in traditional instruction, the planning requirements for developing online instruction are much more stringent. An instructor who is also the developer of the course to be taught online must approach the development from the perspective of understanding that what is done in development constitutes the lion's share of the online teaching process. This shift requires a different mind-set from that needed for teaching a traditional course.

It's frustrating for teachers to know they could do a better job if they just had the time to experiment and have some fun. Unfortunately, most of them have trouble just fitting everything into a normal schedule. Through the use of effective staff development techniques, faculty members can be well prepared for their first online course (Wilson, 1998).

Even those faculty who resist distance education usually agree that it provides for certain unique opportunities. Others readily and eagerly embrace the concept, focusing on its rewards rather than its shortcomings. These attitudes are greatly varied among institutions and individuals, and seem to be more positive when certain motivational conditions are present (Clark, 1993). Among the top factors motivating faculty to participate as distance instructors are:

- the opportunity to reach remote students (Betts, 1998; Curran, 1997; Dillon & Walsh, 1996)
- intellectual challenge and the opportunity to develop new ideas (Betts, 1998)
- the opportunity to work with more motivated students (Dillon & Walsh, 1992)
- release time (Betts, 1998)
- financial reward (Betts; Lynch & Corry, 1998)
- opportunities for research (Betts, Wolcott & Haderlie, 1998),
- motivation to use technology (Betts, 1998)
- the opportunity for recognition (Betts; Wolcott & Haderlie, 1998)
- the opportunity to utilize support services
- reduced travel (Betts, 1998)
- increased course quality (Eisenburg, 1998; Moskal, 1998)
- and increased flexibility (Dillon & Walsh, 1996)

The concept of faculty flexibility is a particularly significant factor in motivating professors to teach via distance media, particularly with asynchronous forms. Online learning provides faculty with the same anytime, anyplace experience that makes distance learning attractive to students (Eisenburg, 1998). This flexibility and reduction in travel allows faculty to spend more time with their families or in personal interests (InnoVisions Canada, 1997) and enables them to be away for research, conferences, or personal travel without having to interrupt class (Lynch & Corry, 1998).

While resistors to distance instruction argue that course quality is compromised, other faculty are actually drawn to it in part because of the unique opportunities it provides. In certain distance media, such as online learning, students who might normally be withdrawn in a traditional class find the nonverbal interaction less intimidating. In many cases, instructors in online courses find that interaction actually increases because most students, including those who do not normally participate in class, are comfortable asking questions and making comments through email (Hardin, 1998). Hardin's experiences are based upon her experiences at Cameron University as the lead trainer for distance education.

Distance instruction represents a tremendous change in the role of instruction. In the distance environment, the instructor shifts more toward a mentor or facilitator role. This requires a great deal of communication, usually through the use of technology (Clay, 1999). The use of technology, which may be poorly understood by many faculty, results in a substantial increase in the time required to develop and deliver a course (Clay, 1999). Too often, faculty perceive that this additional investment gives them little or no return in terms of support, recognition, or compensation. Because the success of any institutional distance program depends on the attitudes of faculty, understanding and addressing these issues which concern distance faculty is a significant priority for distance administrators (Clark, 1993). The primary factors inhibiting faculty from teaching via distance as identified in the literature were:

- increased workload (Betts, 1998; Dillon & Walsh, 1992; Eisenburg, 1998),
- the altered role of the instructor (Dooley, (n.d.); Kaiser, 1998),
- lack of technical and administrative support (Betts, 1998; Clark, 1993)
- reduced course quality (Betts, 1998; Clark, 1993)
- and negative attitudes of colleagues (Moore, 1997).

Staff development in distance education is a continual process of addressing faculty concerns. Hall and Loukes (1979) described seven levels of concern that teachers experience as they adopt a new practice. Loosely based on this model, a sequential process for the stages of development for distance faculty may be construed. In the first stage (awareness), instructors who are considering teaching via the internet commonly begin asking questions about distance learning (Hall and Loukes 1979). At this level, faculty may hear that other instructors in their area are offering all or parts of their courses through distance media, but are really unsure as to how and why this is accomplished learning (Hall and Loukes 1979). During this stage, instructors need general information, through workshops or printed material, which provides them with clear information about distance learning (Hall and Loukes 1979).

As these instructors learn more about distance learning, they reach the stage of consideration. During this time instructors usually decide whether or not distance teaching is for them. They commonly question the benefits and quality of distance teaching and begin to consider whether or not the benefits are worth the efforts. Consultation and dialogue with other instructors who have taught via distance and detailed information about support available to them is critical at this stage (Hall and Loukes 1979).

Those instructors who decide to pursue distance instruction move on to the implementation stage. At this time, they may find themselves overwhelmed with the demands of preparing and training for distance course delivery. It is in this stage where the majority of training and support should take place. Instructors commonly look for answers to details such as how to test students, how to develop a backup plan, and how much assistance they can receive. These instructors will generally attempt to conform to the proven methods learned through training and from other instructors. If assistance in this stage is lacking, many instructors will fail to go on to the last stage and will declare that distance teaching is not for them. The time spent in this stage will vary greatly among instructors, and may range from a few days to several years (Hall and Loukes 1979).

Once faculty have gained some experience with teaching via distance, they will move onto the last stage of innovation. These instructors often develop new ways of teaching which are eventually used by others, and become models in their departments and colleges (Hall and Loukes 1979).

They may also go on to conduct research in distance education or to assist in the training and development of other faculty. Their support needs are less but they do need encouragement and recognition for their efforts (Hall and Loukes 1979).

Training programs must be designed to meet the needs of persons with a variety of learning styles. While many instructors will learn well from group training sessions, others will do better with self-paced printed materials. Ideally, a training program will include opportunities for at least four types of the following training:

- group sessions;
- one-on-one lab sessions;
- web-based tutorials;
- printed materials;
- listservs;
- mentorships;
- monthly discussion sessions among peers;
- observation of other distance courses (Clay, 1999).

Of all these, one-on-one training is probably the most effective for most instructors in that it enables them to progress at their own pace while giving them a feeling of dedicated support. Yet, one-on-one training is costly and expensive, and should be reserved mainly for those instructors who have expressed a positive willingness to teach at a distance. While group workshops don't focus on individual needs, they do hold down costs and provide a chance for a sharing of ideas. Group workshops can be enhanced by dividing participants into smaller groups based on their level of knowledge and interest.

Training for distance instructors is a continuous process. Experience shows that training simply won't "take hold" unless support is ongoing, with job-embedded opportunities for practice (Wilson, 1998). Not only do faculty literally forget what they have learned, but often the technology changes as do student and faculty needs. Training for beginning distance instructors should include the following as a minimum as cited by Clark (1993) in his national survey:

- an opportunity for addressing concerns;
- distance learning technology and its impact on learners;
- availability of administrative and support services;
- fundamentals of and assistance with course development and adaptation;
- techniques for encouraging interaction;
- development of back-up and contingency plans;
- how distance instruction ties in with the institutional mission; and
- copyright and other policy issues.

In addition to instruction on the use of distance technologies, many faculty will need supporting courses in basic computer utilization, web page production, and development of instructional materials (Dillon and Walsh, 1992). Once instructors become more comfortable with the basics, other elements of training may include:

- management of problem behaviors in a distance class;
- needs assessments for distance instruction;
- practical tips;
- behind-the-scenes look at student perspective; and
- how to vary the instructional mix (Dillon and Walsh, 1992).

As mentioned earlier, one of the factors motivating some faculty to become involved as distance instructors is the availability of support services. Depending on the resources available and the size of the distance staff, support services may include a student assistant, uploading of course materials, creation of online quizzes, development of graphics, test proctoring, and much more. Although these services are critical to a beginning distance instructor, most institutions do not have the resources available to provide an endless array of support services for an infinite amount of time. Furthermore, a true understanding of the technologies involved through hands-on practice will usually result in an instructor's feeling more confident, and thus providing a course of higher quality. For these reasons, institutions may limit the availability of certain support resources. Dillon and Walsh (1992) reported that at the XXXXX University, instructors receive full support in course development, entering student names online, uploading pictures, etc. only during the instructor's first online course. For subsequent support in these areas, instructors are required to come to the lab for assistance so that they are eventually enabled to perform these tasks themselves or to train a personal assistant or secretary.

Many instructors who are highly-esteemed and receive positive evaluations from students in a traditional classroom nevertheless find difficulty in adapting their style to a distance learning format. Based upon reviews of research Clay, 1999 identifies some common mistakes of new distance instructors are:

1. Using cutting-edge technologies when simple measures would suffice. For example, instructors are often tempted to put Powerpoint slides on internet courses when text alone would accomplish the same goal. While PowerPoint may work great on fast campus networks, it often runs, very, very slowly for students using home computers with modems. Fancy graphics, audio, or video without a real purpose also result in frustration and a lack of learning for students.
2. Putting the textbook online. The purpose of an online course is not to replace the textbook. Besides violating copyright laws, instructors are doing students a disservice by forcing them to read long pages of text on a computer screen. The internet should be used as a means of interaction and resource sharing.
3. Failing to develop structure and clear requirements. In order for students to participate, they must receive clear expectations from their instructors. Saying "every student must post to the bulletin board at least twice per week," works better than saying "be sure to use the bulletin board for interaction."

4. Not taking time to learn the technology. Students are more apt to use technology effectively when instructors have the confidence to answer most of their questions and understand their concerns. By practicing and mastering the technologies, instructors are able to go beyond the basic features and maximize the effectiveness of their courses. Instructors will also save a lot of time over the long run by being able to quickly make adjustments to their course.
5. Failing to interact with students and follow up regularly. Students feel more connected with instructors who participate regularly, even daily, in bulletin board discussions. Students also expect that their email and phone calls be answered within a day or so (Thach and Murphy, 1994).

Incentives and rewards must be addressed for quality distance programs to succeed. Many faculty teaching distance for the first time quickly lose motivation because recognition systems are lacking (Thach and Murphy, 1994). Although stipends for greater class loads and release time are greatly appreciated, faculty may also be motivated by administrative support, funds to attend related conferences, formal and informal recognition through newsletters, emails, and awards. (Wolcott and Haderlie, 1996)

Staff development programs for distance teaching faculty should be periodically evaluated to determine whether or not to continue the existing training or to modify it. Evaluations should provide answers to specific questions such as whether or not the specific objectives of the staff development have been met and whether or not the training was carried out as intended.

Data should be collected on an ongoing basis to assess participant reactions to training, participant learning, and the impact on students. Collected data should be distributed to trainers, distance staff, participants, and decision makers. Various types of evaluation methods may include formative and summative written surveys to determine participant satisfaction with training sessions, written checklists to be completed by trainers, and written or online surveys to determine student satisfaction with courses.

Chapter Three: Methodology

Tradition of Inquiry

A qualitative procedure was used in this study so that the theory will emerge and be inductively derived from the multiple constructions of informant realities. The results will not imply that all similarly classified faculty are similar to those studied. (Bogden & Biklen, p. 45, 1992) Qualitative researchers do not search out data or evidence to prove or disprove hypotheses they believe before entering the study; rather, the abstractions are built as the particulars that have been gathered are grouped together. (Bogden & Biklen, p. 31, 1992) The theory develops from the bottom up, from many disparate pieces of collected evidence that are interconnected. The question of how to provide development activities for online learning does not get much attention in the literature. This research is viewed as exploratory so that variables, suitable for later empirical testing can be identified. There are not many current models of development activities concerning online education which also convinced the researcher of the importance of a qualitative rather than a quantitative paradigm of research (Morse, 1991).

The rationale for approaching this study from a qualitative orientation can be justified using Merriam's (1988) six assumptions about qualitative research:

1. Qualitative researchers are concerned with process rather than outcomes. In this study of development for online undergraduate courses, the focus was not on the outcomes of the process, but rather how the faculty members experience the process of course development in this type of context.
2. Qualitative researchers are interested in how people make sense of their experiences. This study explores how faculty members perceived their experiences in the context of building courses for online instruction.

3. The researcher is the primary instrument for data collection and analysis. Data collection techniques such as interviews, participant/observer, journaling, and observing were utilized in this study to explore the experiences of the faculty members.
4. Qualitative research usually involves fieldwork—physically going to the informant's setting. In this study, the researcher participated with the learners in the settings in order to be completely immersed in the study and thus better understand what the faculty members experienced. The researcher kept a journal of experiences to document that experience.
5. Qualitative research is descriptive. As in this study, qualitative research seeks to understand using words, not numbers, to describe an experience. This study sought to understand the faculty member's experiences of development activities as they relate to online instruction.
6. Qualitative research is inductive. The experiences of the faculty members guided the study and therefore guided the themes and issues that became the ultimate focus of the study.

Case Study Methodology

The study employed a case study method as a procedure for data collection, analysis, and report writing. Case studies explore an event or group bounded by time and activity and collects detailed information by using a variety of data collection procedures during a sustained period of time (Merriam, 1988; Yin, 1989). A case study is expected to catch the complexity of a single case. A single leaf, even a single toothpick, has unique complexities (Stake, 1995). The context of the case involves situating the case within its setting, which may be a physical setting or the social, historical, and/or economic setting for the case. The focus may be on the case that, because of its uniqueness, requires study (intrinsic), or it may be on an issue or issues, with the case used instrumentally to illustrate the issue (instrumental) (Stake, 1995). The basic objective of a case study design is to develop research using a mode of data analysis, such as (a) the search for "patterns" by comparing results with patterns predicted from theory or the literature; (b) "explanation building," in which the researcher looks for causal links and/or explores plausible or rival explanations and attempts to build an explanation about the case; and (c) "time-series analysis," in which the researcher traces changes in a pattern over time, a procedure similar to time-series analysis conducted in experiments and quasi-experiments (Yin, 1989; Creswell, 1994). This study was an instrumental case study (Stake, 1995).

A group of faculty members as they developed online courses was studied. The purpose was to look at understanding the experiences of faculty members in this area as opposed to a particular faculty member. Case study research emphasizes placing an interpreter in the field to observe the workings of the case, one who records objectively what is happening but simultaneously examines its meaning and redirects observation to refine or substantiate those meanings (Stake, 1995). The aim of case study research is to thoroughly understand the case (Stake, 1995).

Data collection is extensive in a case study, drawing on multiple sources of information such as observations, interviews, documents, and audio-visual materials. Yen (1989) recommends six types of information: documentation, archival records, interviews, direct observations, participant observations, and physical artifacts. The type of analysis of these data can be a holistic analysis of the entire case or an embedded analysis of a specific aspect of the case (Yin, 1989). Through this data collection, a detailed description of the case emerges, as does an analysis of themes or issues and an interpretation or assertions about the case by the researcher (Stake, 1995). This analysis is rich in the context of the case or setting in which the case presents itself (Merriam, 1988). The investigator narrates the study through techniques such as a chronology of major events followed by an up-close or detailed perspective about a few incidents (Creswell, 1998).

Case studies develop "pattern theories" as an explanation for what emerges during naturalistic or qualitative research. These pattern theories represent a "pattern" of interconnected thoughts or parts linked to a whole (Lincoln, Guba, 1985).

Data Collection Strategies

The role of the researcher included participating in all instructional workshops as a participant observer during the development activities for the respective courses. The researcher was also included in the initial design of the development activities with the assistance of EDAD. The researcher kept a journal of his own experiences and of the informal interviews and discussions conducted with faculty members about their experiences. In addition, the participants in the class were asked to journal their experiences on a weekly basis. This was facilitated by including an area in the Lotus Notes environment where they were able to enter their comments and/or observations. There were not any stipulations on what they should address in their weekly thoughts.

An advantage to the Lotus Notes environment is the way it captures and organizes the written conversations that take place online. This captured conversation was a primary source of data used to verify information provided by faculty members (see the virtual classroom setting). The researcher was not constrained by the original research questions. As new issues and themes emerged they guided the direction of the data collection and analysis.

Interviews

The researcher conducted unstructured interviews with the faculty participants. When possible, the interviews were conducted in person. "The purpose of the interviews was essentially exploratory…learning enough about a situation to formulate questions for subsequent interviews" (Merriam, 1988, p.74). The unstructured interviews will be used for further in-depth research in the area of staff development for online instruction.

Observer/Participant

The researcher participated as an active observer in all workshops and development activities, and also worked with the instructional faculty from the university during development of the activities for the community college faculty members involved in the study. The researcher was not involved in the actual development of the community college courses. Participants in the study were aware that the researcher was participating as a student secondary to his role as a researcher. The researcher kept a personal journal of his experiences as a participant/observer. The researcher has taken numerous courses through the university system and thus has many experiences of his own which may have presented some bias to the study. The researcher is in a supervisory role to the faculty members who participated in the study which may have had some effect on the participants interactions. The variable of the supervisory position of the researcher is difficult to measure.

Faculty Journals

All participants were asked to keep a log of their experiences and submit them to the researcher on a weekly basis. The participants were able to enter their comments when they accessed Lotus Notes to do their course development. These journals were private to the participants and were kept anonymous.

Pre/Post Survey Instruments

Three faculty development workshops were held at the university for the participants. Prior to the first workshop, the participants were asked to complete a pre-evaluation. At the conclusion of each workshop, a post evaluation was conducted for the material presented and/or discussed. The information collected using those instruments was helpful in determining if the objectives of the session had been met.

Data Analysis

For a case study, analysis consists of making a detailed description of the case and its setting (Creswell, 1998). In addition, Stake (1995) advocates four forms of data analysis and interpretation in case study research. In categorical aggregation, the researcher seeks a collection of instances from the data, hoping that issue-relevant meanings will emerge. In direct interpretation, on the other hand, the case study researcher looks at a single instance and draws meaning from it without looking for multiple instances. It is a process of pulling data apart and putting them back together in more meaningful ways. Also, the researcher establishes patterns and looks for a correspondence between two or more categories. Finally, the researcher develops naturalistic generalizations from analyzing the data, generalizations that people can learn from the case either for themselves or for applying it to a population of cases.

To analyze the information that will be collected as an observing participant and interviews, the researcher used Tesch's (1990) seven steps. This process has been called "segmenting" the information (Tesch, 1991), developing "coding categories" (Bogden and Biklin, 1992), or "generating categories, themes, or patterns." (Marshall and Rossman, 1989).

1. Get a sense of the whole. Read through all of the transcriptions carefully. Jot down some ideas as they come to mind.
2. Pick one document which I will go through and ask myself, What is this about? Look for the underlying meaning.
3. Continue the same through several informants, making a list of all topics. Similar topics will be clustered together.

4. Take the list and go back to the data. Abbreviate the topics as codes and write the codes next to the appropriate segments of the text.
5. Find the most descriptive wording for the topics and turn them into categories. The total list will be reduced by grouping topics that relate to each other.
6. Make a final decision on the abbreviation for each category and alphabetize these codes.
7. Assemble the data material belonging to each category in one place and perform a preliminary analysis.
8. If necessary, recoding of the existing data took place.

These seven steps took the researcher through a systematic process of analyzing textual data. The process of sorting information took place using file folders and file cards (Merriam, 1988). Categories were coded as topical areas as suggested by Bogden and Biklin (1992). The researcher used setting and context codes, perspectives held by subjects, subjects' ways of thinking about people and objects, process codes, activity codes, strategy codes, relationship and social structure codes, and preassigned coding schemes.

A search for "patterns" was conducted. The pattern in the case may fit other models; the "pattern" may illustrate rival explanations; different "patterns" may emerge from the database. The analysis may lead to "explanation-building" (Yin, 1989). Other analyses that were used included chronologies, analyzing embedded units, making repeated observations, or conducting a secondary analysis of the literature.

The following data collection matrix shows the type of information by source that was collected in this case study.

TABLE 1 Data Collection Matrix: Type of Information by Source

Information/Information Source	*Interviews*	*Observations*	*Documents*	*Class Participation*
Faculty Participants	Yes	Yes	Yes	Yes
Researcher	No	No	Yes	No
University Faculty	No	Yes	Yes	No

Verification Strategies

In qualitative studies, researchers are concerned with the accuracy and comprehensiveness of their data. Qualitative researchers tend to view reliability as a fit between what they record as data and what actually occurs in the setting under study, rather than the literal consistency across different observations. Two researchers studying a single setting may come up with different data and produce different findings. Both studies can be reliable (Bogdan & Biklen, 1992).

The internal validity of the study can be accomplished through one of four ways, all of which are used in internal validity of case studies.

1. Triangulation, whereby researchers make use of multiple and different sources, methods, investigators, and theories will be used in order to provide corroborating evidence for the validity of the study (Ely, et al., 1991; Erlandson, et al., 1993; Glesne & Peshkin, 1992; Lincoln & Guba, 1985; Merriam, 1988; Miles & Huberman, 1994; Patton, 1980). Stake (1995) states that we must present a substantial body of uncontestable description. Case study research should report information that the reader is likely to know in order to assure the reader that we can see straight and think straight. If there is likely to be a dispute about an important issue, more detail should be presented. Stake (1995) also suggests that other researchers take a look at the same scene or phenomenon. In this particular study, unstructured interviews, observation notes, faculty journals, researcher's journal, assessment forms, and interactions within Lotus Notes were used.

2. Member checks to solicit informants' views of the credibility of the findings and interpretations also can be used (Ely, et al., 1991; Erlandson, et al., 1993; Glesne & Peshkin, 1992; Lincoln & Guba, 1985; Merriam, 1988; Miles & Huberman, 1994). This technique is considered by Lincoln and Guba (1985) to be "the most critical technique for establishing credibility" (p. 314). This process involves taking data, analyses, interpretations, and conclusions back to the participants so that they can judge the accuracy and credibility of the account. The actors are asked to review the material for accuracy and palatability. The actor may be encouraged to provide alternative language or interpretation but is not promised that that version will appear in the final report (Stake, 1995). Faculty participants were asked to review the study for accuracy and offer their input as far as the interpretation of what transpired during the staff development activities.
3. The researcher clarified his bias from the outset of the study, so that the readers understand his position and any biases or assumptions that might impact the inquiry (Merriam, 1988).
4. Rich, thick description will be used to allow the readers to make decisions regarding transferability (Erlandson, et al., 1993; Lincoln & Guba, 1985; Merriam, 1988). It is the researcher's responsibility to provide enough relevant, "thick description" (Lincoln & Guba, 1985) to enable the readers to make a decision regarding whether or not findings are transferable to another context.

Chapter Four: The Experiences

Description of the Case

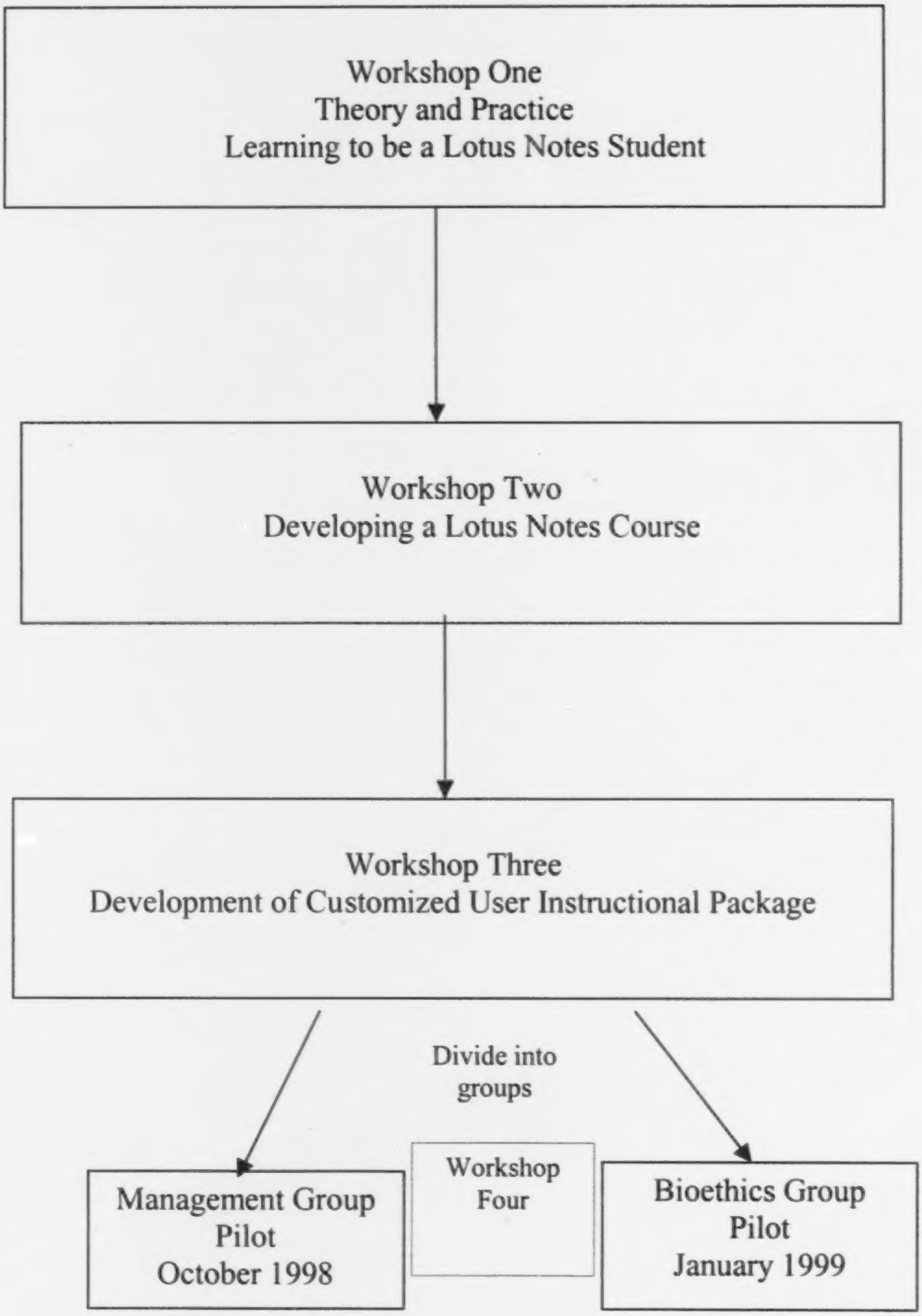
A community college in southeast Nebraska was moving towards offering courses in an online environment. This process required them to explore what may be some different ideas regarding the teaching and learning process. The community college partnered with the Department of Educational Administration (EDAD) at a local university to explore the opportunities. The goal of the experiences was to provide an opportunity to explore interesting ideas regarding learning and to enhance their capacity to apply these to their professional activities. EDAD was used because of their experiences in the delivery of online instruction through Lotus Notes. The Educational Administration Department began delivering a doctoral program via Lotus Notes groupware in the Spring of 1995. They were chosen as the facilitators of the seminars because of their experiences in the development of a degree program.

The training of the community college faculty and development of selected courses occurred during a series of coordinated seminars. Face-to-face workshops were held between the community college faculty and the university instructional team. To employ these procedures a case study of nine community college faculty members involved in the development of online education courses with the assistance of the Department of Educational Administration (EDAD) at a university in Nebraska was conducted. The case study consisted of workshops, journals of participants, using participant and researcher observations, interviews, and accessing public documents as the major forms of data collection.

None of the faculty members had prior experience with online instruction. The faculty members included two from Math and Science; three from Humanities; two from Business; and two from General Studies. Seven of the faculty members were female and two were males. They were purposefully selected by virtue of volunteering and wanting to develop courses using this mode of instruction. This type of candidate was especially important to the project as it was important that the participants have the drive and motivation that it takes to undertake a project of this type. By using motivated individuals, the project was assured more success. Moving from the traditional classroom to an online format requires that an individual be able to think outside the box.

The purpose of the activities developed for the faculty at the community college was to explore what might be different ideas regarding the teaching and learning process. The outcome is stated as 'enhanced student learning.' The basic layout of the activities, as designed by EDAD, that the faculty members went through appears in the following diagram.

The Process with EDAD


Workshop One
Theory and Practice
Learning to be a Lotus Notes Student
Workshop Two
Developing a Lotus Notes Course
Workshop Three
Development of Customized User Instructional Package
Divide into groups
Workshop Four
Management Group
Pilot
October 1998
Bioethics Group
Pilot
January 1999

Workshop One

Eight faculty members from the community college were brought together at the university on a cool January day in 1998. The meeting was held in the resource room of EDAD. Along the walls were bookcases filled with dissertations, journals of the higher education profession, and in one corner was an antique display case with awards given to the department and department members from days gone by. In the center of the room was a large library table for the group to congregate around. The chairs were typical of what one would find in a regular classroom situation. Not incredibly comfortable but, they sufficed for the purpose. In the front of the room, EDAD had setup a laptop computer and projection unit to display information to the group using a presentation package. There was not a screen on the wall to project the information, just a blank wall. As the participants, dressed in comfortable casual business clothing, entered the room coffee was waiting for them. They were greeted by four faculty members of EDAD. They were Dr. Gullion, Dr. Green, Dr. Maltor, and Dr. Small. All four are in dressed in suits and ties. The community college faculty later described the group of professors as the "old guys." The initial ritual of greeting and talking to each other began in the typical fashion of addressing such topics as "welcome," "I am pleased to meet you," "what is your area of speciality" and of course the topic of weather which is typical of Nebraskans.

After the initial greetings and ritual of getting the coffee or a soda everyone found a place around the large library table. Name tents were written by everyone to facilitate the process of associating names with faces. For some of the participants, this was their first meeting with faculty colleagues. There were no seating assignments.

The community college is a three-campus system. Within the group of community college faculty, five of the participants were from one campus, two from another, and one from the third.

Dr. Gullion began the meeting by welcoming the community college faculty to the university and to the endeavor they were about to undertake. He asked for introductions from the group. Members of the community college and university took their turn in talking about themselves.

The Subjects

Bill is the program chair and instructor in the business administration program. Bill holds a Bachelor's and Master's degree from the University of Nebraska - Lincoln. Bill worked in the development of the Principles of Management course.

Susan is a general education instructor and web designer for SCC. Susan holds a Bachelor's degree from the University of Nebraska - Lincoln. Susan worked in the development of the Principles of Management course.

Linda is an English instructor. She has used Daedelus software to teach English courses. Linda holds a Bachelor's degree from Kearney State College in Nebraska and a Master's degree from the University of Nebraska - Lincoln. Linda worked in the development of the Bioethics course.

Angela is a life sciences and math instructor. She has taught in a satellite distance learning classroom. Angela described herself as a "techy." She enjoys spending her spare time working with computers. Angela holds a Bachelor's degree from Chadron State College in Nebraska and a Master's degree from the University of Nebraska – Omaha. Angela worked in the development of the Bioethics course.

Michael is the chair of the Math and Science department and an instructor of Biology and Chemistry. Michael holds a Bachelor's degree from Chadron State College and a Master's degree from Kearney State College. Both institutions are in the state of Nebraska. Michael worked in the development of the Bioethics course.

Sandy is a general education instructor. Sandy holds a Bachelor's and a Master's degree from the University of Nebraska – Lincoln. Sandy worked in the development of the Principles of Management course.

Pam is an English instructor and refuses to teach in an environment where there is any type of broadcast. Pam holds a Bachelor's degree from Kansas Wesleyan University and a Master's degree from Fort Hays Kansas State University. Pam worked in the development of the Bioethics course.

Doris is a business instructor. Doris has taught in a fiber optic distance learning classroom. Doris holds a Bachelor's degree from Avila College in Missouri and a Master's degree from Doane College in Nebraska. Doris worked in the development of the Principles of Management course.

Dr. Gullion has been with the university for quite some time. He is a full professor within the university's educational administration program. His experience in online education began in 1995 when he worked with an Australian professor who had many experiences in developing and working with distance education.

Dr. Green described himself as "recycled" professor. Relatively new to the educational administration department, he had previously worked in speech and language developmental disabilities at the same institution. He was ready for a change and saw the opportunities in educational administration as something he was ready to take on. His experiences in online education are limited, but he has found the process to be very intriguing.

Dr. Small, a retired community college president, came to the University for something to do and his wife "wanted him out of the house." His position at the university is one of working with "special projects." He was asked to join the team because of his recent experiences and knowledge base of the community college system and environment.

Dr. Maltor, a retired student services dean, is also working with the University in the area of "special projects." He was asked to join the team because of his wide range of experiences in student services.

Pre-Assessment

After the introductions were complete, and prior to the presentation of theory and practice, the faculty members were assessed for their understanding of learning, teaching, teaching strategies, collaborative learning, and expectations of Lotus Notes. The assessment tool and responses appear below.

Question One

What is your definition of learning and what learners do?

Responses:

Learning is the process of understanding a subject that one is not familiar with. Learners actively participate in the process by reading, writing, communicating, etc.

Learning is the gathering and use of information. Learners pick up information from many different sources and try to use that information in furthering their life goals.

Learning is the acquisition of new information and/or the further understanding of previously known information. Learners use their senses (i.e. vision, etc.) to receive the information and their cognitive skills to process and retain information.

Engage in activities that expand the learner's knowledge base.

Actively engaging with information.

The study of facts and observations, etc., that allow one to be a future productive citizen and employee. Learners are those who do the studying.

Learning is absorbing new material and information so one can process the information and then be able to apply what has been learned in a useful way.

Learning is acquiring the skills and techniques to deal with new materials and ideas. Learners interact and cooperate with teachers and materials needed to acquire these techniques which lead to the interaction.

Question Two

What is your definition of teaching and what the teacher does?

Responses:

A teacher is the person who facilitates the process of learning.

Teaching is guiding and helping the learner; teachers work to facilitate the gathering and use of information by the student.

Teaching is the process of conveying information to learners. Teachers use a variety of visual and/or auditory techniques or other methods of instruction.

A teacher is a facilitator that sets goals and assists the learners in reaching those goals and/or lets the learner set goals and helps them reach those.

Providing information for learners; providing opportunities for learners. As Fred Kemp of Texas Tech state—(Teachers should) be "a guide on the side, not a sage on the stage."

The facilitation of learning, i.e., the act of making available the facts and observations noted above that allows the learning to take place. A teacher does this facilitating.

Teaching is to facilitate the learning process. My role is to stimulate the learner and help them learn and digest the material and hopefully apply the knowledge gained in a useful way.

Teaching is facilitating learning using a variety of methods and finding the methods that best suit the learning styles of the learner.

Question Three

Describe the strategies you have found effective in engaging in the teaching/learning process.

Reponses:

1) Demonstration – tell and show (show and tell); 2) lab – practical experimentation; 3) group projects – help each other to complete a task; 4) lecture and questioning.

Lecture for information; discussion in small groups and classroom setting; laboratory exercises; one on one dialogue; inquiry

Relating current information, (i.e. regarding cloning, etc.) to classroom lecture material. Utilizing computer-based instructional aids (i.e. CD-ROM, multimedia, etc.). Ask questions to initiate discussion.

Students participate in research and sharing of information. Students do group projects that involve some creativity and "real world" application. Students participate in simulations and discussion.

As an English teacher, I have used the Daedalus Interactive Writing Environment (DIWE) which has been very effective. Many students are extremely passive—even resistant—to learning about writing. DIWE pushes students to become actively involved in the writing process. Using the software for classroom instruction is the key strategy that I have been using.

The engagement of students (learners) in classroom/laboratory activities that are important, interesting, and relevant. I have written text materials and lab activities for students and have tried especially to make these relevant.

Answering questions with questions. PowerPoint lectures. Group processes where students must work together to solve a situation. Use of computers to facilitate learning (simulations).

Since I have taught for a number of years, I have gone through a number of ways to communicate the subject material. A variety of discussion methods, small group work, textbook reading, research have contributed to my current teaching style.

Question Four

What is your attitude about collaborative active learning versus the traditional information giving model of teaching?

Responses:

It is a practical approach when you think about how learning on the job takes place, but as a traditional teacher it is sometimes hard to get used to. It's not always "fair."

Both have the ability to be effective if used properly.

I suspect that removing traditional "boundaries" of time and space in the collaborative setting will allow a great deal of "freedom" for students who hesitate to interact in traditional settings. However, I expect that a lack of face-to-face and/or verbal interaction might hinder my ability to accurately assess a student's progress and involvement.

I prefer collaborative and use it whenever I can.

English composition theory has long supported the notion of the collaborative process. I feel that collaboration is extremely important in the learning process.

I am just now learning what active learning is all about. I like to think I have an open mind, but am stuck in my ways to a great degree. I do want to try some things to see if they will work.

We all must learn to interact and share—one must lead or facilitate to start things and then become an active resource.

I think I learn best using the traditional method but I have come to accept that collaborative active learning is more suitable to most students' learning styles and probably, if I were honest, to my learning style also.

Question Five

Write a paragraph about your expectation of how the Lotus Notes approach will be different from the traditional approach to courses.

Responses:

> I imagine there will be more one on one interaction. There will be little of the traditional "lecture" class. It will be more "student driven" and less "teacher driven."
>
> The Lotus Notes approach will move some of the responsibility for the active learning to the student in that the student will have to take more initiative in making sure the work is done. There can be more opportunity for one on one dialogue (by computer) and that will give some students more of a chance to participate where he or she might not in the typical classroom.
>
> The Lotus Notes approach will allow students to work around time and physical location constraints. The Lotus Notes approach will also result in increased responsibility for the student.
>
> Less face to face contact; less verbal discussion/feedback; more written discussion/feedback.
>
> I expect the Lotus Notes approach to be different than the traditional approach to instruction because of the separation of "guide" and "student." The responsibilities for both will be greater. No longer can a student passively sit in a classroom and "receive" information provided by a "sage." The student must be an active participant; therefore, the instructor's role is very important. Learning must be facilitated in a new environment.
>
> I am not at all familiar with Lotus Notes. I realize that it is distance learning and I have a pretty good idea what distance learning is, but am not familiar with Lotus Notes.
>
> I would like to use this method to develop a stronger distance learning Principles of Management course. Using Lotus Notes, telecourse tapes, interactive computer discussions and the normal text.
>
> My two main expectations are that the classroom becomes the world and that through writing students communicate with each other and with the instructor by writing, which is a definite benefit for a writing course.

These comments suggest that the participants have a good understanding of the theory of online collaborative instruction. Years of experience of the participants in the regular classroom have brought the faculty members to realize that teaching is more than a process of presenting information. Participants defined teaching as "facilitating learning using a variety of methods and finding the methods that best suit the learning styles of the learner."

The Presentation

After the assessment, Dr. Gullion, using presentation software, gave a presentation entitled, "Collaborative and Distance Learning Solutions in Education." The general problem was defined as "find a delivery system that would remove the barriers/constraints of time, location and distance, and provide opportunities for rich dialogue among students and faculty at a reasonable cost." The presentation of online learning was focused on Peter Senge's definition of dialogue. He defined it as "thinking together" as opposed to discussion which literally means "heaving or thrusting" ideas at one another. Senge (1990) describes the dialogue process as the "discipline of team learning starts with 'dialogue,' the capacity of members of a team to suspend assumptions and enter into a genuine 'thinking together.' To the Greeks *dia-logos* meant a free-flowing of meaning through a group, allowing the group to discover insights not attainable individually. Interestingly, the practice of dialogue has been preserved in many 'primitive' cultures, such as that of the American Indian, but it has been almost completely lost to modern society. Today, the principles and practices of dialogue are being rediscovered and put into a contemporary context. (Dialogue differs from the more common 'discussion,' which has its roots with 'percussion' and 'concussion,' literally a heaving of ideas back and forth in a winner-takes-all competition.)"

Senge (1990) wrote "the discipline of dialogue also involves learning how to recognize the patterns of interaction in teams that undermine learning. The patterns of defensiveness are often deeply engrained in how a team operates. If unrecognized, they undermine learning. If recognized and surfaced creatively, they can actually accelerate learning."

Team learning is vital because teams, not individuals, are the fundamental learning unit in modern organizations. This is where "the rubber meets the road'; unless teams can learn, the organization cannot learn." (Senge, 1990)

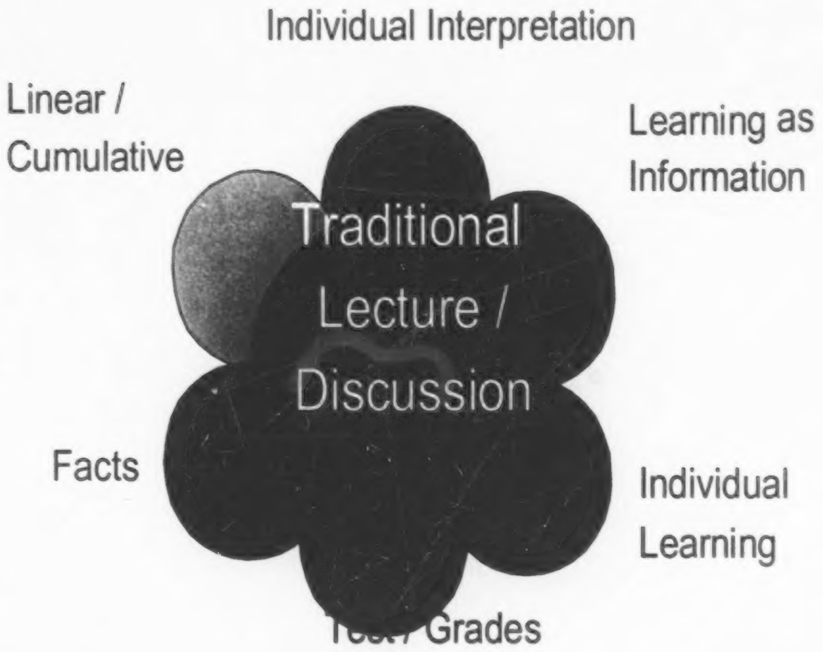
A comparison of the two solutions (distance education vs. online education) that have been offered to meet some of the requirements were presented by EDAD. Dr. Gullion stated that "Interactive television is one solution but it doesn't meet the criteria of removing the barriers and constraints of time and place. It offers very little in terms of opportunities for dialogue. At this point in time it is also very expensive."

A discussion was then held on the "College of the 21st Century" as presented by the Virginia Commonwealth University. The members of EDAD presented the community college faculty with the idea that the "new college will be a network of resources, not a place." "Students will require a global, multicultural perspective in their educational endeavors." "New technologies will shape college teaching." "The curriculum will become more closely integrated." "Learning will need to take place where they live and work." "Teaching will need to be more responsive to individual differences while the roles, responsibilities, and rewards of the faculty will change." "Colleges will also become increasingly interdependent."

EDAD then discussed the underlying philosophy of online learning. It was stated by EDAD, that "there are significant differences when instructors move from the traditional classroom setting to that of an online environment." The online environment calls for "collaborative, job/contextual, and project-based learning" along with learner responsibility. EDAD then moved to describing the two types of learning that is generally compared, passive versus active learning.

In passive learning, learning occurs through the traditional/lecture discussion model. The following is the diagram that was presented to the group of community college faculty members on passive learning by Dr. Gullion and the other members of EDAD.

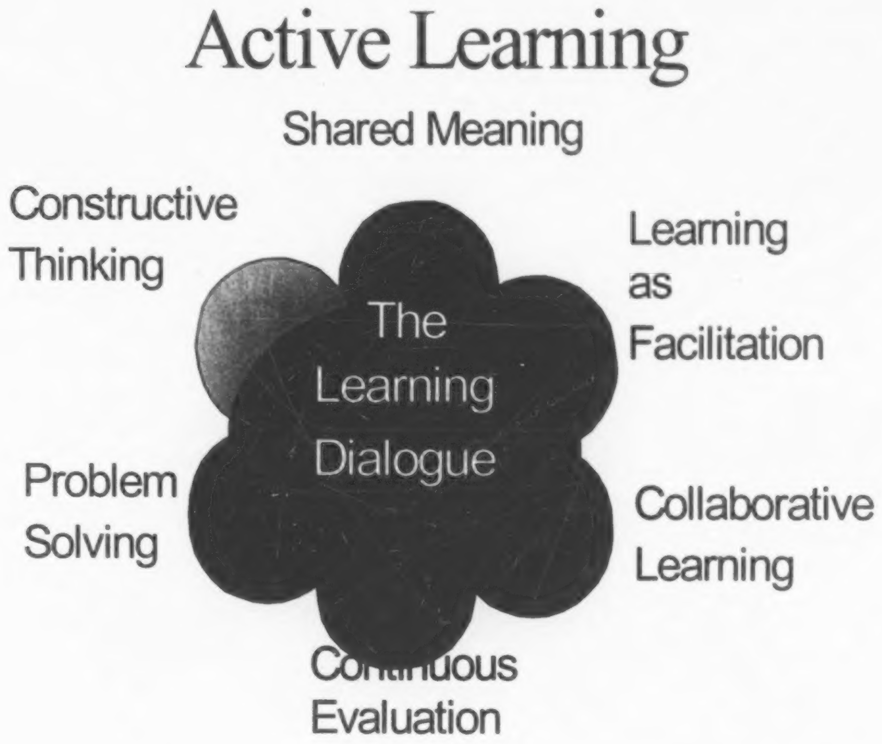
Passive Learning



Individual Interpretation
Linear / Cumulative
Learning as Information
Traditional Lecture / Discussion
Facts
Individual Learning
Test / Grades

In this model of passive learning as presented by EDAD, learning is based upon a linear cumulative process of learning that is left up to individual interpretation. Most learning takes places in the form of information sharing based upon facts. It is very individual and measured by a testing system that has been developed by the instructor.

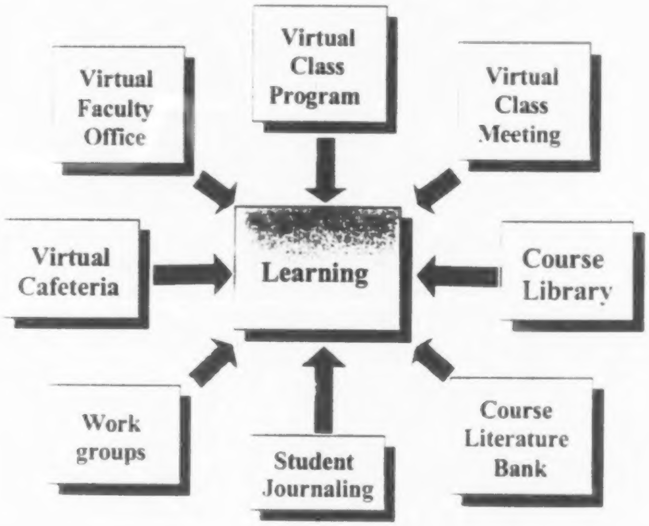
EDAD suggested that in an online learning environment an active learning style is much more appropriate. The following is the diagram that was presented to the group of community college faculty members on active learning.


Active Learning
Shared Meaning
Constructive Thinking
Learning as Facilitation
The Learning Dialogue
Problem Solving
Collaborative Learning
Continuous Evaluation

Dr. Gullion shared with the group that the idea of active learning proposes that learning centers on what is described as the learning dialogue model. In this model, the terminology such as shared meaning, learning as facilitation, collaborative learning, continuous evaluation, problem solving, and constructive thinking are used.

The presentation continued with EDAD discussing that within the online learning environment, using Lotus Notes shareware, there are multiple pathways to learning. Databases are designed to be similar to that of what you would find in a typical college setting. Each one of these databases contains information that the students use to learn and interact with other students and the faculty member. Typical databases include the virtual faculty office, the virtual class program, the virtual class meeting, the course library, the course literature bank, student journalizing, work groups, and the virtual cafeteria. The following diagram shows the typical databases that EDAD has used in the delivery of the university courses.

Multiple Pathways to Learning:


Virtual Faculty Office
Virtual Class Program
Virtual Class Meeting
Virtual Cafeteria
Learning
Course Library
Work groups
Student Journaling
Course Literature Bank

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Dr. Gullion continued the presentation, indicating that it is intended in an online environment that learning take place in each of these databases. The facilitation of collaborative learning in an online learning environment produces a "structure where dialogue is encouraged and can take place." "Collaborative learning engages students." "It requires responses by everyone, there is no hiding in this environment." "Participation will increase significantly in this environment and the focus is on the individual student."

In discussing the typical constraints in learning situations, members of the faculty from EDAD indicated that there are four basic areas. (1) Time in both terms of length and completion is one of those barriers. (2) Location is a constraint in that the student has to complete in a certain place and generally that travel is required to the place where the class is being held. (3) Cost tends to be another constraint that restricts students. Not only in terms of tuition, but the added costs of travel, time away from the job, and equipment that is required for successful completion. (4) The other constraint is pace. Most people prefer that their learning be self-scheduled and flexible. These basic philosophies were presented as the concepts that the members of EDAD maintain.

The faculty members of EDAD shared with the group that an online learning environment provides "opportunities for the student to read, study, and search before responding." "Since all of the responses are written, students are given the time to think before they write. They can edit and clarify before they submit. They are able to read every other students response to their comments in order to add further clarification and help the student to self assess."

EDAD shared comments from previous students who have enrolled in courses and programs at the University. They include:

> "I found the virtual learning experience just that…a learning experience. I knew how to fake…on-campus…for the first time, I was responsible for my own learning."
>
> "It was fascinating, provocative, stimulating, challenging….and isolated. But only physically. I met some wonderful people!"
>
> "On campus classes are faculty-driven; this was faculty-guided."
>
> "I was surprised that I felt I got to know classmates better through Lotus Notes. In many classes on campus…little interaction occurs."

Becoming Online Students

The faculty members of the community college were then asked to become online students. EDAD felt it was important that those who were going to teach in such an environment should have a good understanding of what it is like to be a student in this environment. Actual hands-on, interactive, experience with an existing Lotus Notes course was provided for the faculty members. The software was handed out to each particular faculty member from the community college. They were then taken to various University instructor's offices and introduced to the process of loading and installing Lotus Notes.

There were three groups of faculty members. Each group was assigned a different faculty member from the University. One by one the faculty members successfully loaded the software on to a machine at the University using the instructions that EDAD provided to their current online students. Through this installation process, the faculty members were enrolled in a course entitled the "History of Higher Education." This is a course that was currently being taught by EDAD. Each faculty member was expected to spend an extended period of time participating in the courses. The faculty members participated as part of the class for approximately five weeks. The staff of EDAD monitored the progress of the faculty members via Lotus Notes.

Once all participants had successfully completed the installation process, they were brought back together in the resource room to hear about the steps involved in the development of an online course. The process as defined by EDAD and explained by Dr. Gullion included (1) observation of a Lotus Notes class being demonstrated, (2) developing copyrighted databases, (3) considering the learning theory, (4) development of the first course, (5) piloting a course, (6) revising databases, (7) designing a program, (8) marketing a program, (9) the offering of courses, and (10) assessment of student learning and feedback.

EDAD then presented the attitude/policy implications for an institution that must occur when moving to an online environment. The items discussed included:

1) They include the encouraging of faculty to use technology.
2) The concept of learning as opposed to teaching needs to be demonstrated.
3) The curriculum issues of non face-to-face instruction need to be addressed.
4) Technology costs and fiscal issues such as tuition and fees, and faculty load/credit hour count need to be considered.

The presentation concluded and the faculty members were then asked for their reactions and thoughts to the process and what had taken place today. This information was collected using various questions and a post assessment instrument was administered.

The post session feedback questions and written responses appear below.

Question One

What things in this session were the most helpful to you?

Responses:

I appreciated the overview and the hands on work.

"Hands-on" use of Lotus Notes.

Everything! Not knowing anything about Lotus Notes before, everything was valuable.

Review of active learning. Hands-on and demonstration of Lotus Notes.

Overview, hands-on.

Information that explained what Lotus Notes is and how it can be used. Working on the computer to get an idea of this working environment.

Hands-on demonstration.

Question Two

What concepts and/or ideas challenged your attitude or thinking about teaching and learning?

Responses:

I have been coming, after 30+ years of teaching, to accept the learning and dialogue theories discussed in the overview, but I don't think I can deal with acceptance of these views and the distance learning via television. This is a system that I think, has great potential that I can accept.

Learning needs to be instructor facilitated in a distributed setting and in a non-traditional manner.

The whole concept of active learning and active learning via Lotus Notes. It means a major paradigm shift for me.

Reinforced what I am already doing but did generate ideas on the "thinking together" versus discussion.

Reflective responses; active learning

The idea of non-dependence on time.

Many concepts reinforced ideas I had about delivery of education.

Question Three

About which issues or topics would you like additional information?

Responses:

Right now I can't think of issues or topics that I need additional information. I don't know enough to know what I would like.

Integration of Lotus Notes with Internet resources (i.e., links to websites, etc.), copyright issues.

Nothing at this time, but I am sure I will be seeking such information. I need to practice and then I'll have questions.

The program already set up, "Lotus Notes Prep Program" looks good. I don't think I need anything else at this time.

Writing curriculum to fit the medium.

How to integrate lab experiences.

Additional information about software features that allow private interaction, hot links to Internet resources, etc. Also, support regarding copyright issues, especially tips that would help individual instructors work more effectively through the copyright process.

Question Four

What will you try to do different as a faculty member as a result of this session?

Responses:

I plan to work with several other faculty members in this group to learn the Lotus Notes potential. I guess I want to continue to push myself towards dialogue rather than traditional teaching methods.

Incorporate distributed learning into teaching load.

I will try to ease into active learning and use of the internet. Perhaps at some point use Lotus Notes, or at least try it.

See Number Two. I will probably teach a class next winter.

Think about student collaboration and think about reflective responses.

> Start working toward the possible introduction of a course using this system.
>
> Continue to work with the software I am currently using in order to become less a sage and more a guide.

After the conclusion of the first workshop, the community college faculty were sent on their way to begin their experience as a student. Final instructions were given on what the expectations were before they returned for the next session with EDAD. The community college faculty members were to go to their offices and homes and install Lotus Notes on their computers. Once the installation was complete the faculty members were to become participating in the modules of a **History of Higher Education in America** course that was currently being offered by EDAD. Faculty members were also directed to begin thinking about the courses they would be developing and were instructed to begin collecting materials for those courses before the next workshop. Armed with a horde of new information, the eight community college faculty members left the University, to return to their homes and offices to begin the endeavor.

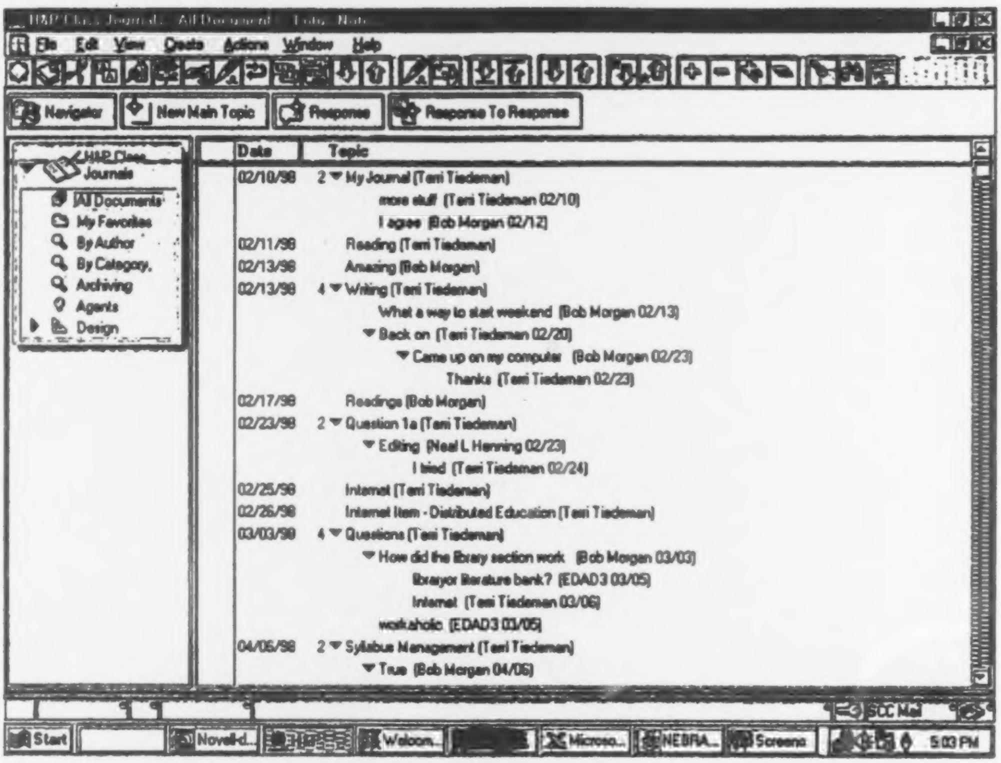
In looking at the journal entries after the community college faculty members had attended the first session there was a sense of being of overwhelmed by everyone except Linda and Angela. The following journal entry by Sandy, gives a sense of what the feelings are after the first session were:

> I consider myself the slow learner on the block. When I said "yes" I wasn't fully aware of what I was getting into. I completely trusted you (HA! HA!). It wasn't until our meeting in Lincoln that I fully grasped what the project was about. Although I looked at the Lotus Notes material, I was overwhelmed. I need step-by-step directions. Those were not available to us. I found myself putting off getting into it, because I anticipated a large block of time to search and try to figure how to move around within the software. I did not have a block of time.

The first workshop presented many challenges to the community college faculty. After spending four hours with members of EDAD and receiving information in the traditional sense of education, through their reflections on the assessment tool, the members of the community college faculty viewed the "hands-on" portion of the session as the most helpful. The whole idea of active learning appears to be the topic that sparked the faculty to think about teaching and learning. The faculty members would like to receive more information on how Lotus Notes operates and what are the capabilities and limitations of the software. The responses would indicate the faculty members left with the idea that the concept of online education can work effectively at the community college level.

Interim

Between the first and second workshops the faculty members of the community college installed and operated Lotus Notes as if they were students in an online course. Their basic conversations and the resulting "threaded discussion" provides valuable information into how these faculty members felt about the experience of being students. The basic threading of Lotus Notes looked like the following diagram.


H&P Class Journals - All Documents - Lotus Notes
File
Edit
View
Create
Actions
Window
Help
Navigator
New Main Topic
Response
Response To Response
H&P Class Journals
All Documents
My Favorites
By Author
By Category
Archiving
Agents
Design
SCC Mail
Start
Novell-d...
Welcom...
Microso...
NEBRA...
Screens
5:03 PM

Date	Topic
02/10/98	2 ▼ My Journal (Terri Tiedeman)
	more stuff (Terri Tiedeman 02/10)
	I agree (Bob Morgan 02/12)
02/11/98	Reading (Terri Tiedeman)
02/13/98	Amazing (Bob Morgan)
02/13/98	4 ▼ Writing (Terri Tiedeman)
	What a way to start weekend (Bob Morgan 02/13)
	▼ Back on (Terri Tiedeman 02/20)
	▼ Came up on my computer (Bob Morgan 02/23)
	Thanks (Terri Tiedeman 02/23)
02/17/98	Readings (Bob Morgan)
02/23/98	2 ▼ Question 1a (Terri Tiedeman)
	▼ Editing (Neal L Henning 02/23)
	I tried (Terri Tiedeman 02/24)
02/25/98	Internet (Terri Tiedeman)
02/26/98	Internet Item - Distributed Education (Terri Tiedeman)
03/03/98	4 ▼ Questions (Terri Tiedeman)
	▼ How did the library section work (Bob Morgan 03/03)
	libraryor literature bank? (EDAD3 03/05)
	Internet (Terri Tiedeman 03/06)
	workaholic (EDAD3 03/05)
04/06/98	2 ▼ Syllabus Management (Terri Tiedeman)
	▼ True (Bob Morgan 04/06)

Understanding the context that the faculty members called their classroom is vital to understanding what processes are necessary to be able to perform in this type of context. The courses developed were delivered via Lotus Notes groupware. Groupware is derived from "intentional GROUP processes and procedures to achieve specific purposes + softWARE tools designed to support and facilitate the group's work" (Johnson-Lenz & Johnson-Lenz, 1981). The Lotus Notes classrooms are designed using databases for different classroom activities. An ongoing transcript is maintained that includes branching capabilities that permit participants to track discussions on each topic.

Lotus Notes is set up as a 'client/server' network, therefore students and instructors have access to the same interface and materials. The Lotus Notes program resides on each of the participants' computers. After students register for a course, they

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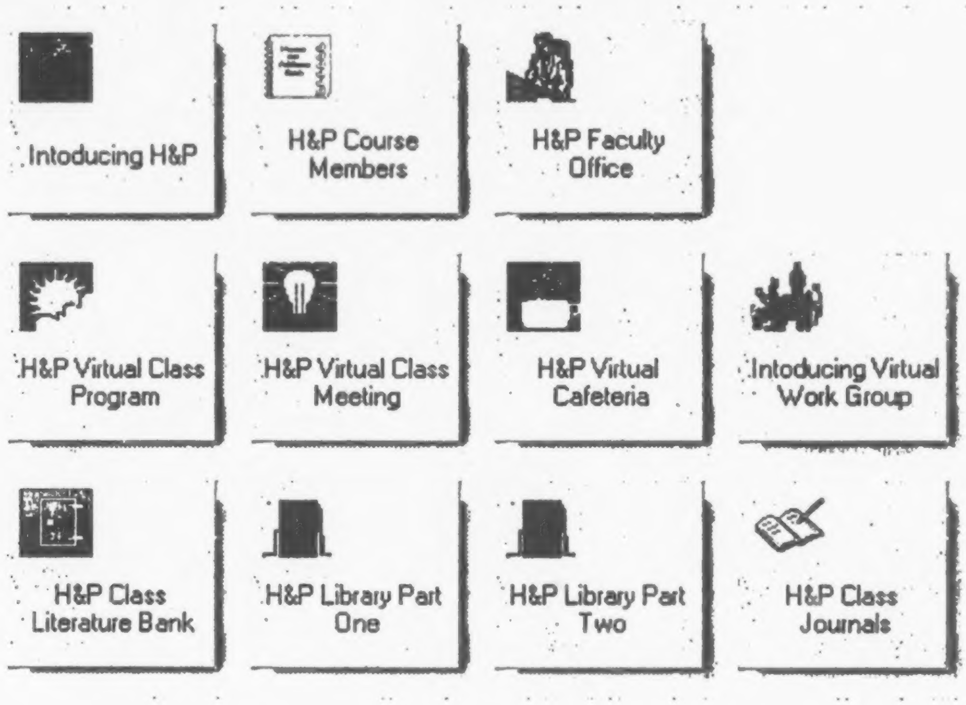
are sent one CD-ROM, and a set of instructions on how to load the Lotus Notes program onto their computers. Once the program is loaded, all transmission of data between the server and the clients take place through telephone lines via a modem or through access to the World Wide Web (WWW).

Participants are able to interact and share information with their classmates and the instructors asynchronously via a technique called "replication." Replication is the process the participants used to access the main computer—server—located at the university, to send and receive messages, comments, and assignments. When they called into the server, via a modem or the WWW, it automatically sends them all messages, comments, and assignments that have been posted online since the last time they replicated. The server also receives any responses, answers, or questions from the student's computer—the client—at the same time. Comments and messages are usually composed offline to save on phone charges and free up the system for others trying to dial into the server. When the participants are ready to receive and/or send materials, they chose *Replicate* from the menu, and proceed to call the server. They can then download all material—instructor comments, classmates' answers, questions, etc.—that had been sent to the server since the last time they had "replicated."

Instructors are able to design their course by designing databases. Each database represents items or places found in a traditional classroom or on a campus, such as the syllabus and course requirements, as well as a virtual cafeteria. The instructors create names and icons for each database. Names of the databases are chosen to emulate a traditional college campus. When participants wanted to access the information in a database, they clicked twice on the icon with their mouse.

The databases contained in the Lotus Notes course that was specifically set up for the community college faculty contained the following databases.


Intoducing H&P
H&P Course Members
H&P Faculty Office
H&P Virtual Class Program
H&P Virtual Class Meeting
H&P Virtual Cafeteria
Intoducing Virtual Work Group
H&P Class Literature Bank
H&P Library Part One
H&P Library Part Two
H&P Class Journals

Upon their return and successful loading of the software, much of the community college faculty's time was spent sending nonsensical messages in the Virtual Cafeteria, instead of the coursework, to the server for others to see. One participant referred to this time as a time to "play and experiment." Comments that were posted included the following.

"This is a hello from an English teacher who likes to talk a lot."

"For someone who likes to talk like you do this should prove to be interesting. Communicating via the keyboard will be another medium for you to get your ideas to people."

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"Hi, Linda. This really is great software. I think I'm addicted to replicating." These types of comments are not of any value to the actual learning process that happens via Lotus Notes, but was very useful to the participants in becoming 'familiar' with the software. The comfort level of the participants in using the software is essential in becoming the instructor of a course. The participants began to help each other solve technical problems in areas such as saving, replicating, copying, highlighting, color choices, and so on. Comments such as "I am not sure if I am the only one coming to the cafeteria. I feel quite isolated….I have checked here periodically to see if anyone is out there. I just don't know" lead to encouragement from other students like, "I thought I would see if you get this response. I too question…however, I did get your message" which was followed with "Thanks for responding back. It took me awhile to get set up….I thought replicating my own was enough." These types of conversations occurred quite frequently in the virtual cafeteria. Learning was taking place in how to run and manipulate the software. More importantly, community building and a sense of belonging were established by the participants through this type of activity.

This type of activity would have probably continued for some time if the researcher and university faculty had not intervened by encouraging faculty members to begin participating as students in the History course. The researcher as an observer/participant posted the following comment to get faculty members to move on.

> TO EVERYONE
>
> I think it is time to begin moving on to the class meeting and getting a handle on what it is like to be a student in this type of environment. Go the Virtual Program Icon to get the questions for module one. The answers are then to be placed in the Virtual Class Meeting Icon. The reading materials have been sent to the campuses. Linda has the information for the Beatrice Campus, Sandy for Milford, and Bill for Lincoln.
>
> As you have comments and concerns about the program and methodology, please document these type of things in the journals icon.

As predicted by one of the faculty members from the university, this type of comment caused some discontentment among the faculty members from the community college. They did eventually move on to the course modules after some snide comments such as "Sure, spoil all the fun" and a little more nonsensical conversation like this comment, "Thanks. I guess it is time for me to put on the student hat and get my readings done and the first question written. It's been a while."

The faculty members were then asked to begin participating in a module of a course that was developed by the University. This course, offered via Lotus Notes on a regular basis to students throughout the world, is entitled **History of Higher Education in America.** By having the faculty members participate as students, they became familiar with the pitfalls and the difficulties that could occur when trying to communicate via this format for learning. Faculty members were asked to look at two modules. Module one was about the origins of higher education in the Americas with special attention to the development of post-secondary education in the United States. Within the module there were four questions. The questions were as follows:

Question 1:

Respond to either (a) or (b)
(a) The colonial colleges of North America reflected the concepts of European Higher education.
Prepare a short paper on this statement for class discussion.
or
(b) Paul Shore makes the comment that:
One of the most persistent misconceptions regarding universes in medieval Europe and colleges in colonial America is that they were extremely elitist, in the sense that they enrolled exclusively students from upper class or ascendant middle class families.
Write a short paper correcting these misconceptions.

Question 2:
Respond to one of (a) or (b) or (c) below:
Religion and politics
(a) The desire of important religious denominations for a literate, college-trained clergy probably was the most important single factor explaining the founding of the colonial colleges.

Present a statement for class consideration addressing the above..

or

(b) European settlers in the New World sought to approximate the culture which they had been most familiar with in their homeland, and in their effort to attain that objective they viewed higher education as the means for the transmission and preservation of that culture.

Prepare a response to this statement for class discussion.

or

(c) Harvard College and William and Mary College were two of the earliest higher education institutions in America.

What were the bases for their structure and higher education philosophy?

Question 3:
Respond to one of (a), (b), (c), below:
American Indian education in the colonial colleges

(a) Address the contributions of Eleazar Wheelock, the original founder of Dartmouth College, to the early education of the American Indians.

or

The Dartmouth college case

(b) Describe the importance of the Dartmouth case and explain its origins and outcomes to your classmates.

or

New England and Virginia

(c) Compare the efforts of the colonists in New England to those of the colonists in Virginia when it came to providing monetary support for the education of the Native Americans.

Question 4:
Select one of (a), (b), (c), (d) below:
Freedom and constraints
(a) What were the major events occuring during John Leverett's tenure as President of Harvard College?

or

(b) The paper by Kathryn Moore states: "Now that the campus turmoil of the 1960s is becoming historical artifact, it is possible to reflect upon the circumstances that gave rise to it and to seek commonalities in prior experiences." Please do this for class discussion.

Social function
(c) All institutions of higher education are created to serve social functions at the time. What was the role of the Colonial colleges in terms of social purposes?

or

Harvard statutes and charter
(d) Analyze the 19 Harvard Statutes (1646) and relate them to the prevailing Colonial environment. See pages 89 and 90 of the assigned text.

Of the eight faculty members that were involved in the project at that time, five responded to question one and only one faculty member responded to question two. One of the participants never responded to any of the questions. Numerous college e-mails such as

> Hi Gang,
>
> It looks like everyone is online. Let's start working in the virtual classroom this week. Some brave person needs to make a response to the first question in module one and then you should start a conversation on the material posted. To help get us started I'm going to suggest the following approach. John, you start with the first question in module one. Rebecca, you do the second question. Robert, you take the third question and Sheryl, you do the fourth question in module one.
>
> At this time, you may decide which of the options in each question to address. Everyone should plan to take part in commenting on the information posted by initial respondent, but it isn't necessary for you to make a comment to every entry. If you agree with something said explain why, or if you are not sure about something then make that comment. Expand on the entries by adding your own views, and feel free to ask questions or seek clarifications from each other.

were sent to the faculty stressing the importance of interacting as students. “Prodding” was also given by university faculty members. It was emphasized that this type of activity would help them become better aware of their student needs. After feedback from the faculty members with comments such as, “it wasn’t really a class,” “the material wasn’t relevant,” “I had no interest in that type of material” it was realized that a more productive module should have been developed in order to get the faculty members to participate as online students. It was suggested by the community college faculty that "the module be built around Lotus Notes." Another suggestion was to "focus the module on the theory of learning in this type of environment."

Planning Meeting

A planning meeting between the researcher and members of EDAD was held on March 13, 1998. Members of EDAD who were present included Dr. Gullion, Dr. Small and Dr. Maltor. The purpose of this meeting was to plan for the second workshop that would take place with the community college faculty members later in March. The discussion centered around the topics and activities that would be included in the second workshop.

Workshop Two

A second workshop was held in March of 1998 at the University in the same location as the first workshop, the resource of room of EDAD. The weather outside had turned to spring and chirping birds greeted the community college faculty as they arrived on campus. All the community college participants and university faculty members were present. One additional participant had been added to the group at this point.

Julie was a former English instructor with the community college. Because of an advancement in her husband's career, Julie had moved to California. Linda, another English instructor, and Angela suggested that Julie be added to the group. The concept of online learning and not literally being to able to see or hear seemed to be a perfect way to "test" how it all worked using a "remote" faculty person. Julie, expressed an interest in working on the project before she left her employment with the community college and was excited at the thought of continuing to teach even though she would be staying home with her two small children after her relocation to California. It was fortunate that Julie happened to be in the area for the second workshop, so she attended along with the other eight faculty members of the community college.

Topics that were presented by EDAD included a community building activity, a review of previous activities and their application, common questions about online/collaborative coursework, and developing a model unit. Initial questions posed by EDAD and discussed included the following.

1) How does one begin thinking about the development of a course in this mode?
2) How are these courses different from traditional courses? Are there commonalties with traditional courses?
3) Are there some common elements among most courses put together in this mode?
    A. Courses are laid out completely from beginning to end (front-loaded) before being presented to learners.
    B. Courses have well defined goals and purposes.
    C. Courses have well defined learner behaviors, activities, and operational procedures.
    D. Expected learning outcomes and evaluation (grading) criteria has been developed.
    E. Courses usually consist of an appropriate number of activities (units, parts, modules, etc.) Some characteristics of an activity, unit, module, etc. are:
        1. Provide complete and well laid out content or access to content.
        2. Have one or more tasks the learner does alone.
        3. As appropriate have one or more tasks which requires interaction among a group of learners.
        4. Provide appropriate supplemental materials/support (or access to materials/ support) i.e. textual material, audiovisual material, lab experiences, etc.

5. Provide appropriate learning parameters i.e. instructions relative to tasks expected of the learner, expected learning outcomes, basis for evaluation, etc.

6. Do I get to know the students?

7. Do students get to know each other?

8. How is it decided what to include in a course?

9. Can anyone take the courses?

10. Can anyone conduct such courses?

11. Can all subjects be provided this way?

12. What are some of the things that will happen that are not planned to happen? How do you deal with these?

13. How do you engage learners in the learning process?

14. What needs to be done to transform a syllabus to a distributed/collaborative mode?

No discussion was held on the specific questions that are listed, but were presented by EDAD as items that the community college faculty members should think about as they began the development of the courses.

A brainstorming session was held with community college faculty. The question was posed, "What goals could be achieved for SCC through Distributed/Collaborative Courses?" The participants generated quite a list in about 20 minutes. Included in the ideas were

- the community college could reach a wider student population;
- bring greater diversity to the college;
- offer educational opportunities for home bound students;
- expand the area of service for providing educational opportunities;
- greater numbers (FTE's);
- marketing tool

  - Non-destructive program is one of very few in the country that could be offered, many requests are received throughout the year from other states expressing and interest in this program
- Focus on a degree
- Program orientation versus course orientation
- Recruitment tool
- would allow students to focus on a degree as opposed to courses;
- opportunity to offer unique programs that only this community college has to offer to other parts of the state, country, and world.

The participants were also asked to generate a list of benefits to the students and to the faculty when delivering courses online. This type of activity helped the participants to focus on the reasons why and how online courses change the way in which education is delivered. Benefits to the students that were noted by the participants included

- time and place constraints of traditional education;
- the issue of active vs. passive learners;
- non-traditional learners;
- helps to open students up;
- gives educational opportunities for all types of students with disabilities;
- removes the traditional classroom barriers;
- levels the field for all learners;
- removes the barriers of physical characteristics;
- expands the horizons of the students;
- there is greater student interaction;
- students are learning from students;
- students are forced to learn the social interaction rules;
- students will have to learn the models of "idea expression";
- writing skills will improve;
- students will receive the opportunity to experience technology.

The participants were then asked what the benefits to faculty might include. The group generated the following.

- a new way to present information;
- it is refreshing and invigorating;
- helps to keep the instructor on task;

- there is a logical flow of information with the threading of Lotus Notes;
- the teacher becomes the facilitator;
- allows the teacher to be more objective;
- the diversity of the student body can be refreshing;
- encourages respect for all students (removal of the halo);
- allows more time to have one-on-one conversations and learning with the individual students.

Dr. Green talked about his experiences with the courses he has been assigned to. Dr. Green addressed the problem of non face-to-face communications and how the process can be facilitated through the "use of color and fonts." "By changing colors and fonts, you can get your message across in a very effective manner. The use of the color red can be very powerful."

Participants worked individually or in groups in the development of a course of particular interest to them. It was at this point that two groups began to develop their own ideas depending on the demands of the course and material that needed to be covered. The two courses that would be developed were Principles of Management and Bioethics.

The Management group consisted of four faculty members. Two of the team members are from the same campus while the third and fourth members are each from different campuses. Community college faculty who developed Principles of Management were Bill, Susan, Doris, and Sandy. The course description as defined in the community college catalog is: *Introduction to management theory and practice for supervisors of employees or managers of organizations. Functions of planning, organizing, directing, controlling and supervising. New and rapidly developing areas of management.* The decision to develop Principles of Management as the first course was made based upon the experiences the faculty members had with Management. All four had taught, at some point, the majority of concepts covered in a Management course. The course is currently taught in a regular classroom and via telecourse at the community college.

The Bioethics group was made up of five faculty members. Four of the participants were from the same campus of the community college system, the fifth participant was the faculty member from the same campus who had recently relocated to California. Community college faculty who developed Bioethics were Linda, Angela, Michael, Pam, and Julie. The course description as defined in the community college catalog is: *Prerequisite: ENGL1010 or equivalent. Philosophical study of moral problems in the health care industry. Exploration of issues that include the allocation of scare medical resources, patients' rights, biomedical research and transplants, abortion, material-fetal conflict, death and dying, socialized medicine, and the right to health care.* The decision to develop Bioethics as the first course was made based upon the demand for the course in the areas of Nursing for a Bachelor of Science degree requirement of an ethics course and for re-certification issues for those nurses already practicing. Bioethics also gives students who are enrolled in the Academic Transfer program of the community college another option to fulfill their philosophy requirement for an AA (Associate of Arts) or a AS (Associate of Science) degree. Before the development of this course, there were only two philosophy courses offered at the community college to fulfill this requirement for the degrees. This course has never been offered at the community college. The group had made the decision to start with a course that had never been offered before because of a diverse of the group developing the course. The group contained three instructors from the Humanities area and two from the Math and Science area. A course was needed to accommodate that diversity. Bioethics seemed to be the "perfect fit" to solve both of the issues in regard to fulfilling the needs of the nursing field and increasing the options for students on campus to fulfill requirements for their degrees.

At the conclusion of the second workshop, post assessments were taken of the faculty members. The post assessment contained the following questions. The individual responses are listed below each question.

Question One

What things in this session were the most helpful to you?

Responses:

One of the things I found most helpful was the discussion by the EDAD faculty during our brainstorming session. They had a number of interesting insights from their own experiences that I appreciate knowing.

Brainstorming

The open discussions, although not really new information, helped remind me of key issues related to Internet delivery. Also, the discussion of educational goals and objectives helped me refocus on relevant considerations.

Meeting face-to-face.

Feedback from EDAD educators regarding collaborative learning issues and the suggestions regarding course development.

I thought the brainstorming session was excellent, great ideas were shared.

Everything!! Question and answer session helped me see where this was coming from and where it is headed. Discussion on differences in this type of delivery system, student expectations, our expectations.

Question Two

What concepts and/or ideas challenged your attitude or thinking about teaching and learning?

Responses:

The concept of opening up the classroom to a much more diverse group of students is exciting and challenging to me. Having discussions via writing offers many challenges that I continue to think about.

The discussion dealing with interactions and how you can learn about your students from their writings as opposed to the face-to-face interactions in the classroom. That is one of the concepts I am having the largest problem with.

I don't think that "challenge" is as descriptive as "reinforced."

Collaborative learning, facilitating as an instructor, writing responsive curriculum.

Dealing with learners strictly in a non face-to-face realm and the importance of journaling while developing the course.

To think more globally.

Dialog versus discussion, learning how to really work as a team, how much to explain/expect from students using this system, how to make sure they are on task while keeping everyone on an equal level.

Question Three

About which issues or topics would you like additional information?

Responses:

I think I need additional information on creating introductory assignments for students who are new to taking classes by Lotus Notes. I want to work particularly hard on figuring out ways to get students "hooked" and doing the class work.

Mechanics of getting the course on Lotus Notes.

When we have "real" material gathered, a session or two on computer design would be helpful.

Not sure! Need to play with Lotus Notes again. May have questions then.

Development of applications to integrate with Lotus Notes.

More on how to use Lotus Notes.

Grade assessment, sample questions/dialog to engage learners, additional training in Lotus Notes, put links into documents that we can click to reference straight to an article we have placed in the library.

Question Four

What will you try to do different as a faculty member as a result of this session?

Responses:

I will continue to work toward being a facilitator in my traditional classes instead of over teaching.

Think more about presentation techniques and interaction among students and with instructor.

Get in gear on gathering specific course materials. We have plenty of general information about Bioethics (or at least I do).

Practice some of the new ideas. Think about how to implement current teaching strategies using Lotus Notes.

Journal while developing the course in order to "track" progress, troubleshoot problems, etc.

Package courses from start to finish.

Try harder to teach myself to look at the "big" picture, not just my own little corner of responsibilities. Trust others judgement while pushing harder for what I truly believe in.

Follow-up Questionnaire

Between the second and third training sessions a follow up survey was sent to the participants in the training. The purpose of the survey was to help direct the third workshop that would be held in April. Four questions were posed. The questions and responses are listed below.

Question One

Talk about your start-up experience with Lotus Notes. How could it be improved? What problems do you see for students?

Responses:

Participant 1
My start-up experience was easy in some ways and difficult in others. Another classmate sent me a zip disk with my copy of Notes, plus she mailed two articles being used in the course along with written instructions about installation. I was able to email her with questions regarding the procedure, and all went well until I ran into trouble during my initial replication process. At this point we corresponded again via email, but we were unable to resolve the problem. This is where I got bogged down… I next contacted the researcher and he directed me to the contact person at EDAD. A couple of phone calls later, the replication process was complete. However, now I am not sure of where to place the answers to these four questions (in what Lotus Notes database).

Probably my main suggestion for improvement would be to have hard copies of introductory material available, or maybe a letter indicating where the material can be accessed in Notes. I read the "first" and "second" files early on, but they didn't address the problem I was having. Maybe the letter could indicate contact names, initial tasks to be completed, and a time frame.

I can see how it would be easy for students to get lost if they were not computer users and they didn't have a contact who was knowledgeable about the setup, the course itself, and what they should do. It would have been easy to feel isolated if I hadn't already known the other participants.

Participant 2
More technical information at the beginning, non-technical students would have a hard time starting up.

Participant 3
My start-up experience with Lotus Notes has been absolutely positive. The Lotus Notes software, which seems to be nearly a hybrid between an operating system and an application, was extremely easy to learn to use.

I do have one suggestion for improving the software—enable the web browser function in order to allow the user to directly import information from web sites. I'd like to experiment with importing a relevant graphic or document without having to save it (as text or HTML source) or to scan it.

I believe that students may have trouble installing the Lotus Notes software. Also, I believe that replicating may cause difficulty for inexperienced users (as we have seen even among our group).

Participant 4
Start up was fairly straightforward. One problem I can see is that students may have problems with installation. They should have a step-by-step installation guide for both Mac and PC. It should also include troubleshooting tips. When I started providing step-by-step instructions sheets for my students who use Daedalus, I found things went much more smoothly. I also add to the troubleshooting section as students develop difficulties. Having a manual is fine, but most (yes, me included) hate to decipher a manual.

Participant 5
I had trouble first setting up the program for a few reasons. First I did not read closely enough the instructions. Second there were problems with the set up but I got it all squared away and am impressed with the potential. I would like to see what all features can be used for this program, I still feel I do not know all I could.

I think we may have a problem having students with computers that can't handle Lotus Notes and don't have the necessary computer knowledge for initial setup.

Question Two

How could you turn your regular classroom instruction into a collaborative mode?

Responses:

Participant 1
Collaboration is already a regular part of most writing-based classrooms, at least in my experience. In the traditional classroom, students discuss assigned readings (produced by student and professional writers), give verbal and written feedback to other students' ideas, and workshop/peer evaluate drafts of written assignments. These methods could be continued in the online classroom, but special care would have to be given to the way questions and instructions are communicated because students don't have access to voice inflection and other nonverbal communication available in the traditional class setting. Teachers might sometimes misinterpret student questions, and students could misinterpret the instructor and each other. Because of this, I think immediate written feedback would be even more important to both students and the instructor, so that a dialogue could be maintained. Instructors might also

need to speak directly with students as well, perhaps through scheduled telephone conferences. Expected modes of collaboration between students should be modeled for them throughout the semester, with feedback given on the students' success and effectiveness at communicating within the online environment.

Early on in the semester, it might be as much a course about "how to succeed in the online classroom" as it would be a course in the assigned subject matter. The teacher better have adequate knowledge to answer questions about technical issues too, or collaboration can't happen, especially with the novice computer user.

Participant 2
By breaking the material into unit bytes and converting the bytes to the Lotus format.

Participant 3
I believe that only one of my present instructional responsibilities would be somewhat appropriate for a collaborative mode—General Biology. Making that switch would entail spending hundreds of hours creating database files for "lecture" material and assignments. And, I'm not sure that there (presently) is an appropriate way to conduct laboratory sessions via collaborative/distributed education.

Participant 4
We do this most of the time in English class. Online discussion/collaboration is a valuable instructional tool. One concern I have with undergraduate students is that there is a tendency to piggyback on other student's shoulders. That's why plenty of individual work also is important. For example, students in 108 have to write their own essays, but we collaborate to revise content and edit mechanics. We also have collaborative efforts in evaluating assigned readings. This is where most of the piggybacking occurs. Some students "chat" about the reading when they haven't read the material. All they do is pay close attention to the dialogue and regurgitate what others have already said. I realize that this can happen in an oral setting too.

Participant 5
I think this can be a great tool for my telecourse. I can see giving the students essay and case situations to respond to and that way other students can respond to student responses. That does not happen in a normal classroom but with Lotus Notes this can be reality.

Question Three

How might learners be engaged in their learning?

Responses:

Participant 1
One possible answer is that students would be engaged in ways similar to the traditional classroom—by being encouraged to think, to participate, and to stay involved with what is happening in the course. I know I am biased here because this is what English teachers preach to students, but I think critical reading and writing skills, on the part of both the students and the teacher would be vital to the success of the course. In addition, clear assignments given within a regular (and expected) timeframe, frequent feedback by both the instructor and fellow classmates, and accessibility on the teacher's part would help students feel like they were actively participating in the course. And if students are actively participating in the course work, then they are probably engaged in the learning process as well.

Participant 2
By working through the sections using Lotus Notes.

Participant 3
As in traditional classroom settings, posing questions, providing timely feedback to students, and providing interesting and relevant course material should best engage learners.

Participant 4
Learners might be engaged in their learning most effectively by convincing them of the relevance of course materials. If I can convince my students that writing skills are valuable, then I think they are more willing to be engaged in the learning process. PS—I wish I were in Utopia! However, if a student values his or her education, the education process is more effective. Ways to engage—depends on course content. In a bioethics course, current events help establish the necessity of considering the ethics involved in the issues. I would hope that some great discussions could ensue that would help students explore their feelings—and the source of those feelings—about many issues regarding biotechnology.

Participant 5
I will require each student to read three other students responses, analyze, and respond back. The essay exams will be tied into not only the answers written but the discussion around the answer.

Question Four

How might a student be able to do one of your courses if they were unable to attend class? (home-bound students)

Responses:

Participant 1
I am not sure if the question refers to the traditional classroom or to an online classroom. In the traditional class, the method of communicating would have to change, with written assignments and written feedback emphasized. I am unsure of how class discussions could be replicated, unless arrangements could be made for students to communicate online or by teleconferencing (by video and/or phone). If the student was completely homebound, accomplishing this could be difficult. A "go-between" person for the instructor and student would probably help in many ways.

The online environment would probably accommodate the homebound student more efficiently because it already addresses many of these issues.

Participant 2
If it was a non-lab class they could work through the Lotus environment.

Participant 3
At this point, given the courses I presently teach, I'm not certain a "home-bound" student would be able to complete one of my courses. However, with the Lotus Notes based collaborative learning environment, college courses will be accessible to "home-bound" students.

Participant 4
Homebound students could utilize a program such as Lotus Notes to complete course material. Technology is making this concept increasingly feasible. I think Composition 108 could be taught without a "real" classroom.

Participant 5
Between video tapes, lotus notes, the text, and study guides it would be easy to set up a course for study at home. This will allow what I feel is a missing link with telecourses—student communication with one another and the teacher. I feel the dialogue could be better in ways through Lotus Notes rather than the classroom.

Depending on the participant, the responses to the question about their start up experiences varied from "one of the toughest parts" to "my start-up experience with Lotus Notes has been absolutely positive. "How do I do this?" and "how does this work?" were common questions that were received by other participants, university facilitators, and the researcher/facilitator of the staff development process.

There were "initial feelings of isolation" on the faculty member's part. Several participants felt as if they were all alone trying to learn something without much feedback from other participants or university faculty members.

Experience with computer software was a big factor in the initial success of the participants being able to "get up and running." Of the participants, four had extensive experience in loading and running software. The other five had limited experience and required assistance from other faculty and the technician at the university. Faculty members suggested that "more time be spent on this aspect of the staff development process." Two of the faculty members expressed "frustration of not being able to get the replication process to work." University faculty members talked about this process with their experiences and stated that, "it is essential that all participants be up and running and able to communicate within the first two weeks of a course. Those who fail to meet that timeline will generally not continue in the course." One participant expressed this as "PR problem" once the course offerings began.

"Marking items as private" was a concern expressed by faculty members. Instruction needs to be provided in "how to communicate with students on a one-on-one basis without other students being able to 'see' the conversation." Using e-mail or the mail function within Lotus Notes was presented as solutions to this type of problem by EDAD. Faculty members were also encouraged to give students their 800 numbers so that it would be possible to have live conversations. Obviously, the technical ability of the participant came into play here. So for those who were not successful, the issue of concern for the student arose. The participants felt that "step-by-step" instructions needed to be provided to the students for immediate success. One participant felt that we need to "explain everything about the entire process as thoroughly as possible." Even the participants expressed that the instructions were not clear or that they "did not read closely enough."

Workshop Three

A third workshop was held in April of 1998. The workshop was again held on the University campus in the resource room. All the original participants from the community college and the four university faculty members were present. The Lotus Notes technician from the university was also present. The workshop focused on the development of customized user instructional packages. Principles and methodology of developing user instructional packages were presented by EDAD. During this workshop, the participants shared the progress they had made on the development of their courses. Strategies were presented on how to get people to dialogue in an online environment. It was stressed by Dr. Green that how the question is framed and getting students to move up Maslow's Hierarchy of Needs are important strategies. Are the questions "content or analysis"? Dr. Green continued by saying "consideration needs to given as to whether or not you are getting the students into the content remembering that the mind is a social construct."

Discussion on students working together and the idea of cheating was a topic that sparked concern. Some of the community college faculty expressed a concern in this area. They have the "feeling" from experience that the "community college student is different from those students the university serves through their program and that cheating and plagiarism will become real issues for the faculty members to deal with." Dr. Gullion suggested "that a certain element of trust needs to be developed with the students." "The instructor has to take the opinion that working together will expand all the students and push them to higher levels. The use of collaborative learning is the key." Pam suggested that "work ethic usually isn't the same." In the History of Higher Education course, "I chose to read what others did and participated without doing the colonial bit. If I can do it and get no heat, then what makes the professor's believe that our students won't do this? Plagiarism does not equal collaboration." There was tension building in the room over this particular topic. Linda expressed frustration that the university faculty "just didn't get it and didn't understand the typical community college student." Linda felt that "cheating and plagiarism" would be real issues for the student population the community college would be serving. At this point, Dr. Gullion made the comment, "we are obviously at two different levels with this concept" and it is "important that you get to that next level." Nothing further was said by the community college faculty member at this point, but later in her journal, Linda shared the following comments. "Frustrated—don't think the professors understood the need to use "deposit only" technique. I think they believe that my ideas are too narrow—don't know why that's frustrating—not too often that my of view is well received. Discussion does not equal "convince others my idea is better. That is argument. There is a clear difference between post-graduate students and 100/200 level students. Work ethic usually isn't the same."

The discussion on plagiarism and cheating ended without resolve and EDAD moved on to the discussion that the program must be integrated and putting a course together with a group of instructors with a wide variety of backgrounds is crucial to the development of the program. Dr. Gullion stated, "it must be remembered that the students as well as the faculty are on a 'journey of learning'." The learning must be put in "dialogue" instead of conversational mode.

Time was given for the two groups to work on their courses. The third workshop concluded and the community college faculty were sent on their way to continue their endeavors of course development.

The participants were again asked for written feedback at the end of the session. The post assessment contained the following questions. The individual responses are listed below each question.

Question One

What things in the session were the most helpful to you?

Responses:

Question/answer sessions; discussion of handbook items; having the technician available for questions.

The questions and observations of other group members. Meeting face-to-face.

The opportunity to ask/answer questions, the printed handouts—especially the "Introduction to Lotus Notes" handout. This would have been helpful at the beginning of our course.

Group discussions of technical issues.

Looking with others at what we were developing.

I think the discussion of the actual workings of Lotus Notes and having the technician in the room was a big help in understanding some technical aspects and total understanding of limitations.

Information on mechanics of course development.

Question Two

What concepts and/or ideas challenged your attitude or thinking about teaching and learning?

Responses:

Need to think more about facilitating collaboration with the level of students we have.

I learned I make some assumptions about the characteristics of college learners—that may or may not be shared by others.

The awareness that two people on our team are very structured and two of us are more flexible in our teaching approach which has and probably will continue to present challenges as we form and finalize our class program—especially the administrative function.

Specifying "requirements" of courses (in a syllabus) while still encouraging dialogue—wording is important when composing an "online" syllabus.

Nothing different from last time.

I had to think about due dates and the use of language such as required. But I think we need to keep in mind our students are not like a graduate student.

Question Three

About which issues or topics would you like additional information?

Responses:

We need to learn—at some point—how to manage the system on our server without EDAD management.

More technical information about how to use Lotus Notes and what the program will and will not do (for instance, it's not possible to create URL links, etc.)

What criteria are used in assessment of students in Lotus Notes courses?

File formats that are compatible with Lotus Notes with regard to scanning and importing graphics with text.

Anything dealing with the implementation of the course.

I would like to discuss the perceived differences in the graduate and undergraduate student. The graduate student has more foreknowledge in the subject matter and the learning process than our students and we need to help our students not only understand the subject matter but the process of learning for learning sake.

Question Four

What will you try to do differently as a faculty member as a result of this session?

Responses:

Journal more regularly. Work more frequently on project during the summer.

Respond more often with journal articles. Begin submitting content ideas for user information package and feedback.

The realization of the importance of the interaction in Lotus Notes. I was more concerned with getting my work done on Lotus rather than responding to others. Although this seems so obvious now, I guess I didn't pick up strongly on this at our first meeting.

Journal about specific technical and/or content issues as they occur.

Keep working toward course implementation.

I want to make sure I reinforce the idea that the art of learning can happen in any class and show the students hints to take with them as they progress through their learning journey for a degree.

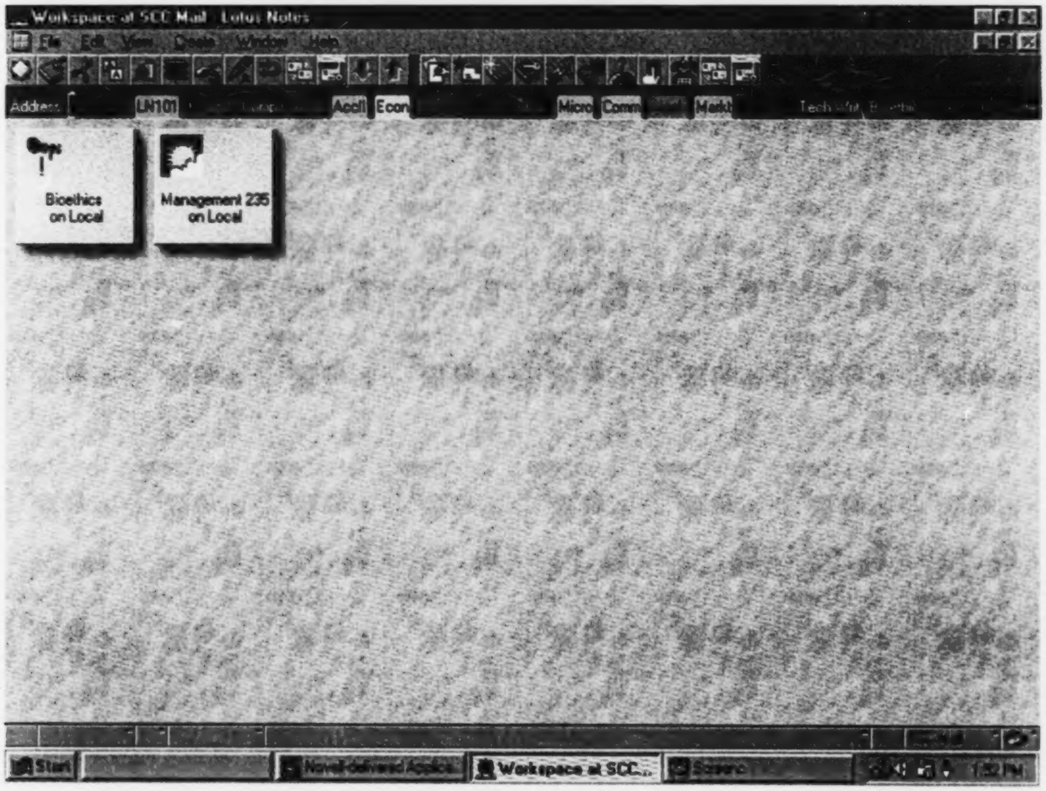
At this point in the training, some anxiety is beginning to show among the participants. The researcher has the feeling from comments, body language, and personal journals that more needs to be done with the actual operation and capabilities of Lotus Notes as opposed to the theory behind it. Angela made the following comment in her journal,

> What we really need is training on the full-blown capabilities of Lotus Notes so that we can explore the opportunities the software opens

> up for us as instructors in a new environment. I know that we won't want or need many of the features, but knowing what's available combined with understanding the software might make it easier for us when we design courses—now and in the future. I don't appreciate the notion that the technician will share bits and pieces only when pressured. I really would like to have an expert in using the software do some work with us so that we can get an overview of the capabilities of the software. I'm not too interested in a tech person's perspective. Now we are working within the constraints of the university system, but in the future the community college will have a server and we need a broader base of understanding.

Development of the Courses

After the conclusion of the third workshop, the two groups had gone their separate ways. A discussion of the process that was used to actually develop the two courses is appropriate at this time. Within Lotus Notes, two databases were established. They were called "Planning Databases." The following diagram shows the two databases.


Workspace at SCC Mail - Lotus Notes
File
Edit
View
Create
Window
Help
Address
LN101
Acct
Econ
Micro
Comm
Markt
Tech Writ
Bioethics on Local
Management 235 on Local
Start
Novell-delivered Applica...
Workspace at SCC...
1:52 PM

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One was established for the Management group and one for the Bioethics group. Within these databases, the participant's process to development was tracked. Because of the threading of conversations, that Lotus Notes provides, an accurate account of the process that the two groups went through.

Principles of Management was developed by a group of four people who all have business teaching backgrounds. Bioethics was developed by a group of five people with varying backgrounds, three from English and two from the Math and Science area. The make up of the groups and timelines had a definite impact on how the courses were actually put together. The training began in January of 1998, with piloting of Principles of Management in October 1998 and Bioethics in January of 1999.

Because of the timelines, the pressure to produce was greater on the Principles of Management than on the Bioethics group. The Principles of Management group followed the template that the university faculty had developed as far as what databases to use, basic formats, introductory materials and the like. The majority of their time was actually spent developing the modules for the course and the evaluation tools that would be used. The Bioethics group, because of time, was able to focus on the actual look and feel of the databases as well as the modules and evaluation tools. Members of the Bioethics group also watched as the Principles of Management course was piloted in October of 1998. One of the Bioethics participants, Julie, actually became a student in the Principles of Management to get the feel of being a student. Julie was unfamiliar with the subject area and felt this would be a good experience for her and her group. She wanted to "audit" the course because she thought it would give her a "different perspective" on this type of teaching and to help her in understanding the software.

Julie's thoughts on being a student proved to be very beneficial to her and the Bioethics group.

> I was right about the coursework helping me learn to use Lotus Notes. So far, I have had to go between databases, use various functions, and search for information according to the course instructions. I feel much more comfortable about using the software…it is really pretty straightforward, but I am not sure I would feel that way if I hadn't been experienced using a computer, plus I was somewhat familiar with how Lotus Notes works. I think as a teacher I will worry about the novice computer user…it will be hard to know what to explain and where to start. One thing that has been really helpful is reading the other students' comments about using the program. Some seem to be catching on with few problems, if any, while others appear pretty lost. I guess it is just like the traditional classroom…we're working with a range of skills. The trick will be to give them enough help so that everyone ends up somewhere near the middle (or better) in terms of proficiency.

Even as an English teacher, Julie comments that

> I have struggled with expressing myself accurately in writing. That may seem weird, since my background is English, but I worry (probably just like the rest of the students) about being misinterpreted, especially in the personal responses. I have noticed that all of the students seem to be playing it pretty safe…we (the students) seem to be doing a good job of giving positive feedback, but it is hard to maintain an ongoing dialogue. For my part, I accept a lot of the blame. I don't do a whole lot with the course until something is due, then I do a lot in a short amount of time. As a reflection on this comment of doing a lot in short period of time, she notes the importance of "habit." It is easy to get out of the habit and before you know it weeks have gone by. One big drawback to the program has been the lack of a chat room function—someplace where students could get together at the same (real) time and talk. The coffee shop sort of works for this, but I am guessing that other students are pretty much like me; some of them may not mess too much with the course until something is due, so it is hard to maintain any kind of ongoing conversation.

This type of response is typical of online courses and the feeling of students until they feel comfortable with the no time and place restrictions. This instructor's "not doing much until something is due" is typical of what education in general has taught or conditioned students to be. In an online environment, daily participation and socializing become important aspects for the building of learning communities.

From the teacher's perspective, Julie shared the following. She was

> amazed with how good of a job the instructors had done with responding to student work." They continually "encouraged dialogue" and have achieved "as much success as is possible." As the course progressed, she noticed that the "conversation and interaction" between some students had really picked up; it was obvious to her "that some students are willing to take on more of a leadership role and do more than just the required number of responses." "The trick for us as teachers is to draw everyone out; that has to be tough when you can't speak to them during class, establish eye contact, etc.

As the course progressed, she comments,

> it's funny—after a while, you do sort of feel like you get to know the other students, at least in some sense. But I have trouble picturing them; it's more like I have an impression of them rather than a clear understanding (but to some degree that's all we really receive in the traditional classroom too). I feel much more comfortable using Lotus Notes. One thing that I have been frustrated with throughout, however, is keeping it straight what goes where. One instructor posted a 'Where do I put my work' sheet, which helped, but I usually don't have the sheet nearby, even though I printed a hard copy. I always end up having to look up where to put things, which is a (minor) irritation.

This experience proved invaluable to the Bioethics group as it really brought in the perspective of the student and the necessity of including precise instructions as to what goes in each database. As a result of this participation, the group simplified the names of the databases for their course. Databases such as "Always Start Here" and "Submit Assignments Here" were used in the Bioethics course. They decided on this type of model because it is similar to what is used in a regular classroom. Each class session begins with an overview of what will be happening in class that day (and week). They felt it would make it easier for instructors too because then they can update and orient themselves for the day's work, which is especially important in a team-taught approach.

Another issue the group struggled with was the issue of "keeping student answers to essay questions private for a time from the rest of the class until they were assured that they have all read the material and worked on it on their own before the discussion was opened up." Linda described it as being able to cut down on the "BS" that they would get from those who don't read and then just wait until an answer or two gets posted and then get into the discussion. There was issue taken with the university instructors that they did not understand the type of students the community college faculty would be working with.

Workshop Four

The following workshops and sessions were held with each specific group so that it could be determined what their individual needs were based upon course content.

A fourth workshop was held in August of 1998. The purpose of this workshop was to work with the group who had developed Principles of Management before it was piloted in October. A similar session was held with the group who had developed the Bioethics course in January of 1999. The staff at EDAD did final evaluation of the course and gave insights into things that needed to be brushed up on. The instructors were introduced to assessment and how it worked at the university. Completed work on modules was reviewed and the user information package was finalized. EDAD also checked on the preparation and readiness of course materials and technical and logistical readiness of students for the beginning of the course. Pam one of the participants on reflecting on assessment in her journal talked about it this way:

> It's time to combine the all-important matter of assessment, the concept that has been consuming all of my time and thoughts for the last several weeks, with the subject of the Lotus Notes project. Actually, assessment has been consuming my time and energy on and off for at least ten years, and I'm not certain that anything has happened of any consequence for a long time. I am all fired up after being at North Central Summer Academy in Rapid City, South Dakota and hearing Cecilia Lopez. She gave us, what I think and what I hope the Assessment Team members and other faculty members will agree, is the most concrete help on assessment that we've had. I hope we can get going in a positive direction with this and accomplish something valuable because it's what we want to do and not just because North Central says we have to. Enough of that. I need to apply my thoughts about assessment to the Lotus Notes project. I think we are talking about three different types of assessment here. 1. Assessment of the program of distance and/or distributed education. 2. Assessment of the Bioethics course delivered by Lotus Notes. 3. Assessment of the Bioethics course. The second and third of these can be done, to some extent, by indirect, student evaluation assessment. However, I think the larger picture fits into the assessment of programs that we are going to get going with after Cecilia speaks to the community college in a week. That starting point is to develop and publish goals and objectives. I need to find out from the director if these goals have been written down for the distance and Lotus Notes program. If they haven't, we have to start there. After these goals have been recorded, measurable objectives need to be linked directly to the objectives, and then methods of assessment, both indirect and direct, have to be created so that student learning can be measured.

Subsequent meetings with the groups were held after the initial start of each of the two classes. The structure of these meetings was very informal for the most part with structured questions as follows:

1. Considering that you are now getting a good start, how is it going?
2. What are your thoughts and reflections about how the course is put together? What could or should have been different and better?

3. What are your ideas now about the first section or introductory materials?
4. What do you know now that you wish you had known before?
5. What would you like others to hear about the program that prepared you to do this course?
6. What are your projections as to how the course will go?
7. Are you positive in your outlook? Concerned? Fearful? Wondering?
8. How do you read students to date? What do you think they are thinking?
9. What has worked for you in helping students understand the course or how have you helped students to facilitate learning?

Principles of Management

The participants who had participated in the development of the Principles of Management course met on October 28, 1998 to express their views and concerns of the course. This was two weeks after the course had been piloted. Present at the meeting were two community college faculty (Bill and Susan), two university faculty members (Dr. Small and Dr. Maltor), and the researcher. During this meeting, many different subjects were discussed. From initial reactions of how the course was going to an evaluation of the training and preparation the faculty members had gone through. The discussion began with the participant's perspective of how things had gone during the first two weeks of the course. The two instructors were not on the same campus, so the interaction that occurred between them was either done through Lotus Notes, e-mail, or phone calls. This type of interaction for the instructors proved to be very beneficial when e-mail and Lotus Notes were used. Because of threading feature of Lotus Notes a permanent record of the conversations between the two instructors was kept.

Once the packets of information had been mailed to the students "the waiting game" began. The instructors became "quite concerned" after the first weekend that no one had done anything. The two instructors communicated about "what should we do?" They decided to make either e-mail or personal phone calls. Susan stated that "some of the people were actually on track and we weren't worried about them but it was still good because they did have questions and one of the participants was having technical problems, she thought she understood the replication process but no information was coming through to the server." The phone calls were a "great" idea, the instructors debated, "do we wait, cause their going to wait until the last minute, you know." Typical of students, it was the instructors' fear that the students would "somehow feel pressured to finish assignments early if they were to call." They found out that the phone calls were very much appreciated by the students. From the perspective of Dr. Maltor and Dr. Small, the calls were important also. It has been their experience that "if you don't get the students on-line within the first week or 10 days, you'll lose them."

The first assignment for the Principles of Management course was a very introductory type of assignment. It allowed the students the opportunity to become familiar with the software. No actual learning of course material was expected during the first assignment. It was a time to get comfortable with the databases and to become familiar with other students on a personal basis. The instructors felt that the assignment was "really good." They have begun to form "cliques," especially the ones that are really checking. Bill shared that "job leads and so forth were shared, there was a lot of networking going on." This unit led Dr. Small to ask the question, "Can you remember when you first did this, would we have done something like this, would have that been a better introduction?" Both participants agreed that it would have better to start the community college faculty with an experience similar to what was introduced in the Principles of Management class. Susan expressed, "it does get you in and out [of the software] and it helps you learn Lotus Notes. One of our first people wanted a book for Lotus Notes and I went back to her and said you can find one, but the course is Management not Lotus Notes and I said if you can just learn how to get around in it, it is just a tool." Bill thought it would be best if he "had the software, loaded it, and then had the participants go through the class participation part before the first face-to-face meeting." The general feel from Bill and Susan was that the software was loaded at the University, which is so different from loading it at home. Another suggestion made by Susan was to "do a theory session first, before you look at any software then at a different session you look at software so that you're not confusing the two." They expressed that "the theory is good, but I think that if we could do the theory away from introducing Lotus Notes it would be more beneficial."

A discussion was held on the use of the Journals database and the understanding that the students were having. Bill and Susan said, "the purpose of the journals was to allow the students to answer discussion questions out of the back of the book right after they have read it and it is also used to compose and have other students to react to. It is being used as a log." The students are having difficulty understanding that they are to respond to other peoples responses in this database. Dr. Maltor expressed that "helpful and reminding comments need to be placed within the database to help the students along." The community college faculty were reminded by Dr. Small that "there is a learning curve to Lotus Notes and that reminders within the particular databases are important for the students in the actual class."

Susan expressed concern that "the students in the course, within the first two weeks, already want to know how they are doing in the course." Bill and Susan had to "remind the students that this was just an introductory unit and that as long as they had completed each of the assignments within the unit they were doing okay and that no grade would be assigned to the first unit." The community college faculty members who taught this course are using rubrics for the tests and for many of the questions. They had decided to not just issue A's, B's, and so on, but rather go on a point system.

It should be noted at this point that the "pilot" of this course and all courses will limited to 8 to 10 students for the purposes of seeing how the course runs. The instructors of the Principles of Management course made other observations during this particular interview. Bill said, "I think we are going to see two things happen. I think you are probably going to see out of these 10, 4 or 5 who really love it and 2 or 3 that are going to say, gosh I won't do this again and what really worries me is the one who doesn't like it. The 4 or 5 that really love it are going to be disappointed because there isn't another course after this." Both instructors feel that they would setup another a course. The feeling at the community college is that this will lead to the development of entire program. It is thought that when we get going, that we will have 4 or 5 classes on-line. "They may only take one or two, but I think somehow we have to get a nucleus of 30 or 40 total students taking 4 or 5 courses so we can take that hit of 10 or 20% that is going to say, 'this isn't for me.'

Bioethics

The participants who developed the Bioethics course met for a similar meeting in January of 1999. Those present at the meeting included four community college faculty members (Linda, Pam, Michael, and Julie (by phone)), two university faculty members (Dr. Small and Dr. Maltor), and the researcher. The researcher got the participants on track by stating: "You've been on your own now for about four months developing the course and based upon what we did and what the university did, what would have you done differently? How would you have approached it differently if you were the trainers?" The comments were pretty explicit in this area, Pam felt that "Lotus content should be first, the history of education material was interesting however, it would have been more relevant to talk about how Lotus Notes works, we couldn't handle both at the same time." Linda felt that "the theory was fine it was just that we were itching to actually work together and make a plan and we just didn't have enough time. For me, I didn't think I needed too much of the theory, I don't know about the rest." It was felt that the theory should have been presented at a later date, once the participants had time to think about the course and how to deliver it. Linda stated, "we have the vehicle built so now we all need to learn to drive it and before we had the driving instructions before we had seen the vehicle."

Julie who was remote to the whole process except for one training session talked about it in this way.

> The mechanics of it are really important. In fact, we talk about implementing the theory now that is one of the things we tried to do as we put together the stuff to mail out to the students is to show them actually how to use Lotus Notes from the very start because that is what held me back the most. Trying to figure out just how the software program worked when I just couldn't run down the hall and ask the researcher or Linda or whoever, how to do it. The thing that has helped me a lot and I realize in a way this is what we were trying to do last spring and I don't know how we

> could do it the way I've done it for all instructors but actually doing the work of the Management course where I had deadlines, it's been a pain, I am not particularly interested in Management, but actually doing the repetitive tasks has helped me a lot. It's really helped me thinking about what my students need to know and how I want to design a course so that it is the type of course that I want it to be. So, I don't know if there is a way that you could do a mentoring program but that is what I think. A one-on-one mentoring program or something like that could be helpful too.

The conversation then focused on the course. The group had built the discussion in such a way that the instructors had control of who saw what. The group believed and Pam expressed that "since they were working with undergraduate students, they wanted more control." "They want the students to have thought about things first before they see others responses because they have had experiences with students that do no reading and they just come and participate based on what other people say and that would be it." Julie discussed it this way,

> even when your trying not to, it is not a belligerent act of plagiarism, what happened to me was if I read a lot of the responses or a lot of the tests in the Management course before I write my own I feel like I have unconsciously absorbed what they have written and I am just kind of rewriting what other people have written. I am sure that part of that depends on the subject matter and the way the assignment or the exam is set up. But, I think it is really easy just to regurgitate what you're hearing other people put down. Maybe that is not true for other people.

At this point, the researcher was asked for his viewpoint, since he had been a student in many of the universities online courses. He responded by saying,

> you could do that, I think. It would be very easy to go through and say this is what Jim said and this is what Bill said and now I am just going to take a spin off of what they said. But I also think that in some respect it does a lot for the students to know that they are headed in the right direction. I mean, I suppose it is the trust issue a little bit, but at least if I am not the first one that responded and maybe I didn't respond because I wasn't real sure about where I wanted to head with it, at least reading others responses gave me some direction so that I did not feel intimidated.

> I agree with what you're saying in that it would be very easy to do that, but I guess I have more faith in humans than that.

No resolution to this particular issue was reached. The Bioethics group strongly believed that control of access and the conversation was very important. It was the university and researcher's view that the process they were talking about would defeat the whole purpose of collaboration and learning together. Consequently, the next discussion focused on an area of concern expressed by Dr. Small and Dr. Maltor, collaboration. The issue was brought to the table. The participants added the following as viewpoints of the issue. Linda said "with the first assignment, they felt that if students saw other student's responses it would hurt the exercise." Julie tended to agree with the researcher and EDAD on collaboration by saying,

> I think the concern about collaboration is a valid one. Because, well for one thing, our team will have more advantage because there are more instructors participating, but I feel sorry for Bill and Susan, because they've got two people who are trying to keep that collaboration going, it has to be hard. The whole Bioethics group has heard me complain repeatedly, gee I wish we could chat. I know it is a big concern to not have that face-to-face.

The Bioethics course is going to have the students start in a database entitled "Always Start Here" and then the instructors will tell them the path they follow each time that maybe for question X, Y, Z they go straight to the discussion group and they put their answer in there and they are always open to all students to read. The group is trying to evaluate individual accomplishment, so it will depend upon the particular assignment.

The Bioethics group did not include a Coffee Shop database into their course. They felt like this type of conversation was useless and that the students in the Management course were placing items in it that should have been placed elsewhere.

They are going to encourage the students to do that type of discussion via e-mail. It was expressed by Linda, "we don't know for sure whether we will like the e-mail at the end either. We are not sure we like it in Principles of Management. We thought the students were ending up putting stuff in there that should have really been in other places."

The group is going to do an extensive evaluation of the course after the first semester using student feedback and meetings among the faculty members who are assigned to the course. The group is not afraid to say, "the course is likely to change, maybe even in some significant ways from the first time it was offered."

The meeting ended with the following question, "What would you like others to hear about what prepared you to do this course? Or what you have gone through to prepare this course. If you were to try to recruit somebody else to do this what would you tell them?" Many reasons were given. Julie said, "It's fun to do something new. It is fun to play around with this stuff." "It is a way to change assignments and what you do in the regular classroom." Another big selling point is the "convenience." "I like that I can stay up, all the things that you read about in the literature, no one sees how you look, no one cares or sees what time of day you do it."

Pam felt that this type of distance learning "is more educationally sound," than broadcast television or telecourses. That particular comment drew comments from the researcher and university faculty. The group was asked to explain "more educationally sound." Pam described "educationally sound" as "more my field, doing the writing, communicating by writing, discussing by writing, that kind of thing. A chance to modify it, improve it."

Linda expressed, "this type of instruction provides the opportunity for instructors to move forward. If you have been in the classroom for a few years there is some frustrations here and there are also some successes and I think in order to grow as an instructor, this provides that type of opportunity."

Summary/Discussion

The purpose of this study was to study the experiences of faculty members at a community college in southeast Nebraska in the development of two online courses. Detailed, in-depth data was collected was collected in order to answer the major research question.

For the purposes of this research, the collection of data stopped at this point. The development and delivery of the courses continues. The process of course development and delivery continues for the community college faculty as they move toward delivery of their first online courses and programs. The process they have been through will be helpful as development sessions are built for other groups of faculty members wishing to enter the online educational environment using Lotus Notes.

Chapter Five: Conclusions and Recommendations

The purpose of this study was to study the experience of faculty members at a community college in southeast Nebraska as they developed two online courses. Detailed, in-depth data was collected was collected in order to answer the major research question.

One research question with a sub-question were investigated:

1. What are the experiences of a faculty member in this context?
    a) How do they describe their experiences of transforming to an online environment?

Group Dynamics

The make-up of the groups had a significant impact on how the courses were developed. Those involved in the development of Principles of Management all have business education degrees and came from three different campuses of the community college system. Because of the distance between themselves, the communication process was handled through the planning database, e-mail, and phone calls. The group did not have face-to-face sessions except for the times during the four workshops were held at the university. The cohesiveness of the group appeared to come quite naturally. The similar backgrounds and experiences of teaching the basic concepts of Principles of Management brought this group together. It did not appear to the researcher that any close relationships developed in this group. As far as leadership, the two individuals that took the lead were Bill and Susan. Bill is a program chair and the only male in the group. Susan's personality is one of control and a definite planner and extremely task-oriented. The other two members of the group were Sandy and Doris. Sandy's personality characteristics do not allow her to be a leader. She was more of a questioner throughout the entire process. Because of personal matters, she was not as active or productive, as she should have been. Doris, by nature, is a leader. However Susan who was in charge quickly established herself as the leader. This did cause some struggles early on in the process, but Doris did not fight it for long.

The task of developing the course was divided into units. Within the Principles of Management course, four units were established, so each member of the group took one of the units. Bill, Susan, and Doris were very good about getting their units developed and did a lot of networking among themselves. As stated earlier, Sandy was not too involved because of personal problems, and thus the development of her unit took quite some time and caused frustration for the other group members.

The group progressed very well throughout the process. Having similar backgrounds and the 'physical' distance between them seemed to facilitate the process very well. The group never felt a need to meet face-to-face other than during the workshop times. It is the researcher's conclusion that the group really took advantage of the Lotus Notes software to facilitate the process. The discussions were very lively and strengthened their understanding of the software and how collaboration can occur without being in the same place at the same time. The other advantage or disadvantage that the group had was that Principles of Management had been taught by two of the instructors in the group and has been also offered as a telecourse. It cannot be determined at this point in time, if that was an advantage or disadvantage.

Those involved in the development of Bioethics came from Math and Science and English. Two of the members were Math and Science instructors and three were English instructors. All members of the group came from the same campus of the community college system. One of the members, Julie, had relocated to California before the project began, but had been with the college (and same campus as the others) for four years. Because of the close proximity of the group, many other face-to-face meetings were held besides the ones that were held at the workshops at the university. It was evident that a lot was accomplished in these meetings, as the quantity of information that was shared through Lotus Notes amongst the participants, was considerably less than that of the Management. Thus, a detailed record of the development process is not available. After the face-to-face meetings, Linda, would post a summary of what had occurred during the meeting in Lotus Notes. While the summaries were very well done, the detail of the actual discussion process was not available. The Bioethics group had no prior experience in teaching any of the topics that were to be covered in such a course. The cohesiveness of the group had been established before the project ever began because of their all being on the same campus and within very close proximity to each other. Close relationships had already been developed. The English teachers (Linda, Pam, Julie) were especially close as they had all worked together previously on curriculum issues within their program. Angela, was located in the same office pod as one of the English instructors, so much of the social interaction had taken place between her and the English instructors. Michael, the chair of the Math and Science program, was also located in the same area of the building as the rest of instructors. As far as leadership, the two individuals who took the lead were Linda and Angela. Linda has a similar personality to that of Susan in the Management group, so it was very natural for her to take charge. Angela, because of her technical expertise was the other faculty member established as a leader. Pam's personality does not lend itself well to a leadership role and the distance of Julie was the reason why she did not become the leader.

The task of development was quite different than that of the Management group. As stated earlier, this course had never been taught or developed by the community college involved in the project. Some of the instructors had exposure to critical thinking methodologies, which seemed to help begin the process of how such a course should be handled. For the most part, through extensive research and looking at other institution's syllabi of the course was how the group determined to best approach this subject area. The math and science backgrounds combined with the English backgrounds seemed to provide a good mix for the development of the course. The science faculty members who participated provided the basic theories and concepts that were to be covered whereas the English faculty members provided the necessary writing and analysis skills that were deemed essential for this course to be successful for students. There was some concern expressed among this group about the absence of a philosophy person in the group. The main concern was for articulation purposes. The group did not divide the course into units as the Management group did. The whole process of development was done as a group. This was much more time consuming and did prove to be frustrating for some of the members. Again the diversity of instructional backgrounds was key to these feelings. The sharing of ideas and the critical thinking process of the group was a process that worked very well for this group. In the end, every faculty member had been involved in the development of every unit.

It appears that bringing together a group of participants from different backgrounds led to much more discussion as to how the course should be developed as opposed to those from similar backgrounds. All of the participants who developed the Principles of Management course have had experience in teaching a course very similar to the concepts that needed to be covered. The basic objectives and outcomes were easily determined in this group. It is the researcher's opinion that the business group was more sequential in their thinking merely from the fact that they prior experience of teaching similar subjects was there. It would be recommended that diversity of the group be considered when developing a course. The outside perspective is important to the development of a course for online delivery. An outsider, not necessarily familiar with the topic area would be a valuable addition to a group. By working together in groups, the entire scope of the course is attended to. Only having one individual work on the development of a course would be difficult unless they had been through the group process at least once.

Playing

One of the unexpected outcomes of this study, was the unexpected time that was needed by participants to "play around." Time needs to be allowed in order for the participants to feel comfortable with the software and the basics of operation before any type of development can be given in course development.

Upon their return from the initial workshop, much of the community college faculty's time was spent sending nonsensical messages using Lotus Notes, instead of the coursework. This was to referred to as a time to "play and experiment." This type of activity is not of any value to the actual learning process that happens via Lotus Notes. It does indicate that when training faculty in online course development adequate time needs to be given to the participants to become 'familiar' with the software that the institution will use as they enter the online market. The comfort level of the participants in using the software is essential in becoming the instructor of a course. The participants began to help each other solve technical problems as one became proficient in a particular area such as saving, replicating, copying, highlighting, color choices, and so on. Learning was taking place in how to run and manipulate the software. The participants through this type of activity established community building and a sense of belonging.

As the literature suggests, it is frustrating for teachers to know they could do a better job if they just had the time to "experiment and have some fun." Unfortunately, most of them have trouble just fitting everything into a normal schedule. Through the use of effective staff development techniques and adequate release time from the regular classroom, faculty members can have the time to experiment and have fun. This type of support has to come from administration. The incentives and rewards must be addressed for quality course development to take place.

Real Time

By having faculty members participate as students, they become familiar with the pitfalls and the difficulties that could occur when trying to communicate via this format for learning. Faculty members looked at two modules of a **History of Higher Education in America** course that was offered by the university.

Expectations of the faculty members as literal students was not received by the faculty members in the context that it was offered in this study. A survey of the nine faculty members would have been useful in determining what types of learning activities would have been relevant for this portion of the training. With the diversity of disciplines that were represented by the faculty, the researcher suggests something that dealt with learning in this type of environment as the module for participation.

The lack of participation by the faculty in this particular part of the training project indicates a failure in this phase. Of the nine faculty members that were involved in the project at that time, seven responded to question one and only one faculty member responded to question two. One of the participants never responded to any of the questions. Even though numerous college e-mails were sent to the faculty stressing the importance of interacting as students, nothing seemed to have an impact on getting them to move forward in the history course. "Prodding" was also given by university faculty members. It was emphasized that this type of activity would help them to become better aware of their student needs. After feedback from the faculty members with comments such as, "it wasn't really a class," "the material wasn't relevant," "I had no interest in that type of material" it was realized that a more productive module should have been developed in order to get the faculty members to participate as online students. Based upon the data from the study, a strong recommendation would be to have the module that faculty are involved in as students be something more meaningful than an existing course. Recommendations would be that the course be built around Lotus Notes or the software that the particular institution is proposing to use in delivery of their online courses. The second recommendation would be to focus the module on the theory of learning in an online environment.

As the process continues it will be important to make sure that relevant material is presented to ensure interaction. With such a wide range of disciplines between the faculty members in any staff development exercise, it will be important to remember to keep the modules generic and relevant to the actual learning objectives.

How do I do this?

"How do I do this?" and "how does this work?" were common questions that were received by other participants, university facilitators, and the researcher/facilitator of the staff development process.

There were "initial feelings of isolation" on the faculty members part. Several participants felt as if they were all alone trying to learn something without much feedback from other participants or university faculty members.

Experience with computer software was a big factor in the initial success of the participants being able to "get up and running." Of the participants, four had extensive experience in loading and running software. The other three had limited experience and required assistance from other faculty and the technician at the university. It was suggested by faculty members that more time be spent on this aspect of the staff development process. Two of the faculty members expressed "frustration of not being able to get the replication process to work." University faculty members talked about this process with their experiences and stated that is essential that all participants be up and running and able to communicate within the first two weeks of a course. Those who fail to meet that timeline will generally not continue in the course. One participant expressed this as "PR problem" once the course offerings began.

Another difficulty that occurred was the ability to scan resources into the system effectively. Two community college faculty members successfully scanned a document into Lotus Notes. The clarity of the article was not of good enough quality that other members could read it. It also occupied more disk space that was necessary. The article eventually was deleted by the technician and rescanned in another format. This training was not included in any of the workshops. It was expressed by the participants that scanning was an essential part of loading the courses as it would save time keying in documents.

"Marking items as private" was a concern expressed by faculty members. Instruction needs to be provided in how to communicate with students on a one-on-one basis without other students being able to "see" the conversation. Using e-mail or the mail function within Lotus Notes were presented as solutions to this type of problem. Faculty members were also encouraged to give students their 800 numbers so that it would be possible to have live conversations.

Assessment of the faculty members before they enter the online environment is essential in order for the instructor and students to be successful. As was stated in the literature it is necessary that the faculty members have the technical ability to operate in this type of environment. Only after determining the technical ability of the potential faculty member can we determine the likelihood of success. It would be further suggested as is supported by the literature that an instructional-design staff be used in conjuction with content experts to create the curriculum and to evaluate their quality. If truly effective, interactive courses are to be developed, experts in various fields are needed to partner with those with technical expertise.

Assessment

"How do we deal with assessment?" This question was heard quite often from both of the groups. Three basic types of assessment questions arose from the workshops.

Assessment tools are needed for the program of online education, assessment of the courses as delivered by Lotus Notes, and assessment of the actual courses. When building any type of program, goals and objectives needed. For this project, as it continues it will be important to establish the goals and objectives for all three areas. The objectives must be measurable and linked directly to the goals, then direct and indirect measures of assessment can be created so that student learning is measured. While assessment was touched on by EDAD, a more thorough and formal process needed to be included in the workshops. The assessment material that was presented was unclear to the faculty members of the community college. Information that was presented only touched on the basic areas of individual course assessment, the study of three modalities, and student assessment. The area of assessment was never addressed to the satisfaction of the community college faculty. It would have been helpful to the community college faculty to include actual examples of how assessment in the online environment could be completed. It is vital to the success of an online program or course that proper assessment tools are in place.

Potential for Community College Faculty

The group of nine community college faculty members that were involved in the development of the courses have experienced the power of online learning. Their positive experiences in the process leads to the assumption that online education can and does work at the community college level. Although the faculty often wondered about the potential of the courses and the training process they had gone through, in final reflection, they saw the project as a success. After the research for this particular project was complete, the community college continued to develop courses. By the Fall of 2000, a full Associate of Applied Science Degree in Business Administration along with a complement of core courses will be in place.

It is important that as the community college breaks away from the university, that a strong training program be maintained for future online instructors. As was found in the literature, "the most important factor for successful online learning is a caring concerned teacher who is confident, experienced, at ease with the equipment, uses media creatively, and maintains a high level of interacting with the students." In the context of online instruction, one might also add ".... And is tolerant of changing technology, policies, and expectations" (Sherry, 1996). Given the lack of experience in online instruction, one might also add willingness to move ahead on one's own initiative while learning from one's own experience. Being up-front with potential instructors with this type of information is essential.

The keys to being successful at the community college in online delivery in terms of the instructor will be the course design, how the content is delivered, and how the instructor interacts with students as they progress through the course. Remembering that faculty members involved in this process follow a sequential process for development can help to assure success once online. The stages as found in the literature include awareness, consideration, implementation, and innovation (Milheim, 1996). Adequate time needs to be given to assure that all of these stages can be experienced. In this project, the Principles of Management group had nine months from the initial workshop to the piloting of their course and the Bioethics group had twelve months. Based upon the success of the two groups, it would be recommended that a minimum of nine months be given to faculty members before the actual delivery of a course in the online environment.

This research parallels the literature in terms of what is needed by the faculty members in order to be successful in most of the areas. Those areas of training that need to be included are:

- group sessions;
- one-on-one lab sessions;
- web-based tutorials;
- printed materials;
- listservs;
- mentorships;
- monthly discussion sessions among peers;
- observation of other distance courses (Clay, 1999).

As the implementation of online learning continues at the community college level it is important to remember that training is a continuous process. You can not leave the faculty members out in the cold once the formal training is complete. Opportunities for further training and techniques need to be offered on a regular basis to current online faculty members. Providing updates in the areas of technology and its impact on learners, availability of new administrative and support services, practical tips, and forums for discussion among other faculty members involved is key to the continued success and motivation of the those involved.

As with any other successful program continuous evaluation is needed. Valid instruments need to be developed to determine whether or not to continue the training and courses being delivered or if they should be modified. This type of evaluation process should provide answers to specific questions such as whether or not the specific objectives of the development program have been met and whether or not the training was carried out as intended.

Data should be collected on an ongoing basis to assess participant reactions to training, participant learning, and the impact on students. Collected data should be distributed to trainers, distance staff, participants, and decision makers. Various types of evaluation methods may include formative and summative written surveys to determine participant satisfaction with training sessions, written checklists to be completed by trainers, and written or online surveys to determine student satisfaction with courses.

Based upon the success of these nine faculty members the potential for a viable online learning program can be achieved at the community college level.

Belief's of EDAD and Effect on Community College Faculty

The community college partnered with the Department of Educational Administration at a local university to explore the opportunities. The goal of the experiences was to provide an opportunity to explore interesting ideas regarding learning and to enhance our capacity to apply these to our professional activities. The objectives of the project were as follows:

1. To improve the effective and efficient practice of online education among selected faculty at the community college;
2. To enable faculty from the community college to effectively design and deliver online education courses;
3. To promote among professional educators an understanding and unitization of the new learning culture and to develop some of the skills useful in its application.

While the university faculty had experience in the development of online courses using Lotus Notes in their graduate program for doctoral students, it must be noted that this particular project was a way for the university to promote their program and what they have learned. A mission statement was developed by the faculty members of the university that indicates their intentions for the project and set the tone for the overall project. It was the "hope that you (community college) will have a successful project; we also hope that people will perhaps develop some different ideas about learning and learners; we also hope that people will perhaps develop some different ideas about how a professional grows and learns new ideas that will carry over into the classroom and their own work regardless of the success or failure of the project."

Throughout the process of development by the community college faculty members, there was a consensus by the community college faculty that too much time was spent on "theory" as opposed to the "actual" workings of the course. They made suggestions that more time be spent on the actual operation by spending more time with the technician. Based upon observations of the two groups working together, the premise for development was somewhat different. The EDAD faculty wanted the creativity of the community college faculty to come through in the project whereas the community college had the opinion, that EDAD should have provided more technical support and guidance in the actual development of the courses. It would be the conclusion of the researcher that the backgrounds and interests of the two groups was quite different. For the most part, the community college faculty were not interested in the theory nearly to the extent that the EDAD faculty were. The actual operation of the software was primary to the community college faculty and secondary to the faculty of EDAD.

A difference that did cause some problems with the cohesiveness of the group dealt with the issue of online testing and the possibility of plagiarism among community college students who would be taking the courses that were being developed. EDAD stressed the importance of trusting the students and that by allowing this type of trust, the students would put their best foot forward. Many times, the community college faculty, especially the Bioethics group, stressed their viewpoint of the community college student being a different type of student than that of a graduate student in a doctoral program such as the university was serving. Through time, the Management took the idea of online testing and did incorporate that into their course. The Bioethics group, sensing a need for control, developed a database within their course that would only let the student have write privileges. This type of database is referred to as a "Deposit Only" database. The information that was placed in this database could only be seen by the Bioethics teaching team. They would then post the information they felt relevant in the student classroom for all students enrolled in the course to view.

Depending on the type of course and testing that is developed either option seems to be a valid way of assessing the learner outcomes. The Management group took the approach of application based testing in their course. Each test consisted of four essay questions that required the students to use their own personal experiences in responding to the questions. They then developed a rubric for each question that was used to determine the quality of the responses. The Bioethics group did a similar type of testing, but because of the material of the course, they felt it necessary that the information not be shared with the other students, until the grades had been assigned by the instructor. The element of trust of students appears to be the issue in how each group approached the testing process.

Conclusion

The process of staff development continues for the community college faculty as they move toward delivery of their first online courses. The process they have been through will be helpful as development sessions are built for other groups of faculty members wishing to enter the online educational environment using Lotus Notes.

These nine community college faculty members were faced with new challenges. Learning how to adjust to the text only communication, the online social process, and the overall context of online instruction were all elements the faculty faced in learning to how be functional in Lotus Notes. The experiences they participated in and shared will be helpful in understanding the development process of online instruction. Faculty members found the activities during the last two months as very beneficial. They describe the process of learning online instruction as a "new way to present." One participant describes it as a "new, refreshing, and invigorating" methodology.

As the process continues it will be important to make sure that relevant material is presented to ensure interaction. With such a wide range of disciplines between the faculty members in any staff development exercise, it will be important to remember to keep the modules generic and relevant to the actual learning objectives.

It is the researcher's belief that there is a significant difference in what happens in a community college classroom and what happens in a graduate level course. Community college faculty members are much more hands-on, let's get it done type of people, whereas the university faculty seem to deal more with the abstract. It will be interesting to see how this scenario continues in future workshops.

This research provides a detailed account of a faculty development process for online instruction. Ideas and events that emerged during this period that will be useful as further staff development activities are implemented. By constantly evaluating, we can assure the likelihood of success for these faculty members as they continue to develop their courses.

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